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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Digital Broadcast Content Protection	)	[redacted]
	)	
Certification of Windows Media	)	
Digital Rights Management Technology	)	
for Use with Broadcast Flag	)	
	)	
To: The Commission	)	

CERTIFICATION

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March 1, 2004

EXECUTIVE SUMMARY

Microsoft Corporation ("Microsoft") hereby certifies that its Windows Media Digital Rights Management technology ("WMDRM") is appropriate for use in covered digital entertainment devices to give effect to the Broadcast Flag. When implemented in a compliant digital entertainment device (such as a PC) receiving digital broadcast content, WMDRM will prevent the unlawful and indiscriminate redistribution of content encoded with the Broadcast Flag by ensuring that such Marked Content is not transmitted or recorded in usable form to or on devices or outputs not protected by an approved digital output or recording technology. Importantly, WMDRM can serve as both a digital output protection technology and a recording technology. This submission describes how WMDRM works and how it will be applied to Marked Content to give effect to the Broadcast Flag.

The question before the Commission is whether the technology submitted for certification achieves the goal of giving effect to the Broadcast Flag and protecting Marked Content to the extent required by the Commission's rules. In addressing this question, the Commission's long-held commitment to technology-neutrality requires that the Commission willingly consider both new methods of protecting broadcast content and new means of implementing content protection techniques. The technology submitted herein provides a software-based approach to protecting Marked Content that is implemented by the technology developer such as Microsoft for use in its products and by third parties. The Commission is familiar with the hardware-based approach to protecting content, advocated by "5C" and others, that is licensed for others to implement in their products in accordance with detailed specifications. These and other approaches deserve equal consideration for approval based on the merits and effectiveness of the respective technologies.

The technology described herein, which uses digital rights management ("DRM") techniques, has won wide acceptance in the marketplace. As summarized below, it is being used today by the motion picture industry to distribute movies over the Internet and by record companies to allow (and monetize) the lawful downloading of music files. Thus, Microsoft's DRM technology has been tested – and accepted – in the marketplace as robustly and reliably protecting digital media from unlawful Internet redistribution. Microsoft submits that the technology also meets the Commission's standards for protecting Marked Content and should be so certified.

WMDRM protects the security of content by subjecting the content to robust encryption algorithms and ensuring that the content, wherever it may go, cannot be decrypted without the appropriate authorization, consistent with specified usage rights. Thus, content subject to WMDRM can be copied and flow freely between and through devices and still remain protected because the content itself cannot be accessed or used unless the device holding the content has the appropriate digital authorization. This well-established content protection method can be applied to Marked Content to ensure that its distribution is limited to personal use consistent with consumer expectations.

Specifically, WMDRM protects digital media content and controls its use through the implementation of expressed rights. Protected content is encrypted with a "key" that locks and unlocks the content. After the content is encrypted, a user can only play back the protected file or stream in accordance with the terms of a separate "license" consisting of a set of meta-data describing the conditions under which the content can be accessed and used. In the Broadcast Flag context, a digital entertainment device supporting WMDRM and receiving digital broadcast programming will screen the content for the presence of the Broadcast Flag. When the

device detects the Broadcast Flag, it will act as a proxy for the content owner, using the WMDRM implementation to encrypt the content into a secure packaged media file with a random key. WMDRM will also generate the associated license – which will contain a specific set of rights ensuring that the programming is output and/or recorded only in accordance with the applicable Compliance Requirements – and securely bind the license to the device in which the WMDRM implementation is running. The generated license will include the right to "Play" and "Copy" the Marked Content on the receiving device and on certain authenticated connected media storage and network streaming devices.

DRM can operate in a variety of environments: in a connected bi-directional environment, as is typical over the Internet; offline, as is done for Redbook Audio CDs today; or in a uni-directional broadcast environment as will be the case in the Broadcast Flag context. However, although broadcast content will be delivered unidirectionally, devices using WMDRM to protect that content generally will have an Internet connection available because WMDRM usually is implemented in PCs or PC-connected devices. That connection facilitates individualization and upgradeability.

The reliability with which WMDRM secures high-value digital media content against unlawful and indiscriminate redistribution over the Internet is reflected in the wide range of Internet-distributed content, including music and movies from the major labels and studios, to which WMDRM applies today. Major studios including Disney, Paramount, MGM, Sony Pictures, Universal Studios and Warner Bros. now make movies available for rental or purchase over the Internet, protected by WMDRM, through online services such as Movielink, CinemaNow and iFilm. Major music labels, which are especially concerned about the security of Internet-delivered content, have also agreed to make individual tracks and albums available

for online purchase or subscription using WMDRM. Labels including BMG, EMI, Sony Music, Universal Music and Warner Music offer WMDRM-protected music through services such as Napster, BuyMusic.com, MusicNow, Liquid.com and MusicMatch. Manufacturers also are incorporating support for the technology in their digital media devices. In addition to being distributed to approximately 450 million PCs worldwide, WMDRM capability is supported in approximately 60 consumer devices, a number that is likely to grow over time with the explosion in the number of devices supporting Windows Media technology.

Because WMDRM is so well-tested and has been proven reliable in the Internet space, and because its reasonable and non-discriminatory terms of use already have been so widely accepted in the market, it is better equipped than many other technologies to meet the goal of the Broadcast Flag to prevent unlawful and indiscriminate Internet redistribution of Marked Content.

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Digital Broadcast Content Protection	)	MB Docket No. 02-230
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Certification of Windows Media	)	
Digital Rights Management Technology	)	
for Use with Broadcast Flag	)	
	)	
TO: The Commission	)	

CERTIFICATION

Microsoft Corporation ("Microsoft") hereby certifies that its Windows Media Digital Rights Management technology ("WMDRM") is appropriate for use in covered digital entertainment devices to give effect to the Redistribution Control descriptor (rc_descriptor()) described in ATSC Standard A/65B: "Program and System Information Protocol for Terrestrial Broadcast and Cable" (the "Broadcast Flag"). When implemented in a compliant digital entertainment device receiving digital broadcast content, WMDRM will prevent the unlawful and indiscriminate redistribution of content encoded with the Broadcast Flag ("Marked Content") by ensuring, in accordance with the compliance requirements set forth in Section 73.9003 of the Commission's Rules ("Compliance Requirements"), that such Marked Content is not transmitted or recorded in usable form to or on devices or outputs not protected by a digital output protection technology or digital content recording technology approved by the Commission (or its designee).[1] This submission describes in detail how WMDRM works in

[1] Microsoft agrees with the IT Coalition Comments filed in response to the *Further Notice of Proposed Rulemaking* ("*Further Notice*") in this proceeding supporting full self-certification of digital output and recording technologies for use with the Broadcast Flag. To the extent the

(continued...)

general and how WMDRM will be applied to Marked Content to give effect to the Broadcast Flag.

I. TECHNOLOGY OVERVIEW

WMDRM will securely encrypt Marked Content and apply a specific set of usage rights to the content that will limit its use and redistribution in accordance with the Compliance Requirements. WMDRM can serve as both a digital output protection technology and a recording technology.

A. Windows Media Digital Rights Management Technology

Digital rights management ("DRM") is the process of protecting digital media content and controlling its use through the implementation of expressed rights generally defined and granted by the content owner. Protected content is encrypted with a "key" that locks and unlocks the content. After the content is encrypted, a user can only play back the protected file or stream in accordance with the terms of a separate "license" consisting of a set of meta-data describing the conditions under which the content can be accessed and used.

DRM can operate in both a connected environment, typically over the Internet; offline, as is done currently for Redbook Audio CDs; and in a unidirectional environment as will be the case in the Broadcast Flag context. When a device seeking to use protected content is connected to the Internet, the required license typically is obtained electronically from a clearinghouse license server. The license contains both the key that decrypts the content and the rights specifying how the content can be used. Once issued, a license is securely bound to the

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(continued...)
Commission adopts self-certification procedures in response to comments filed on the *Further Notice*, "approved" technologies would include properly self-certified technologies.

particular device for which it was obtained and cannot be copied or shared with other non-authenticated devices. Where the device is offline or the content has been delivered via an over-the-air broadcast or other unidirectional communication, the WMDRM implementation within the device generates and applies the license locally.

B. Typical Internet/Online WMDRM Scenario

In the typical connected situation, the content owner encodes digital media content into a "packaged" media file that is encrypted and "locked" with a software key. The key is stored in an encrypted license that the content owners sends separately to a clearinghouse license server. Other information is added to the media file, such as the URL where the license can be acquired. The packaged media file is then posted to a website for download or streaming.[2] After a user downloads the file, the device detects that the content is protected and searches the device for an applicable license. If no license is found, the device launches an inquiry to the web address (contained in the packaged content) from which the license can be obtained. Depending on the terms set by the content owner, the person seeking to use the content may need to take some action (*e.g.*, completing a registration form or providing payment information) to obtain the license or the license may be retrieved "silently" without further consumer action. The license server uses the key ID contained in the content header to issue electronically a license containing the key to unlock the content. Once obtained, the license, which contains both the key to "unlock" the media file and the rights specifying how the content can be used (*e.g.*, for a certain number of days), is securely bound to the device that issued the

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[2] Content saved in Windows Media Audio and Windows Media Video format can also be distributed on a CD or emailed to a consumer. However the content is received, the user will be unable to play the content until it obtains the requisite license.

request for the license.[3] The media file can be played on that device for as long as the terms of the license allow. Although the user can send the encrypted file to another person or device, that person or device will not be able to access the content in usable form without obtaining a separate license. See the attached Exhibit 1 for a diagram depicting the WMDRM process.

C. WMDRM and the Broadcast Flag

WMDRM will function slightly differently in the Broadcast Flag context than in the typical connected scenario. In the Broadcast Flag context, the content owner need not initially encode the digital media content into a packaged media file and issue a license specifying the applicable rights. Instead, a digital entertainment device supporting WMDRM (which may be a PC containing an ATSC tuner card, a set-top box or some other device) and receiving digital broadcast programming, either over-the-air or through a cable or satellite connection, will screen the content for the presence of the Broadcast Flag. When the Broadcast Flag is detected, the device itself will function as a proxy for the content owner and use the WMDRM implementation to encrypt the content into a packaged media file with a random key. The WMDRM implementation incorporated in the device will also generate the associated license – which will contain a specific set of rights ensuring that the programming is output and/or recorded only in accordance with the Compliance Requirements – and bind the license to the device in which the WMDRM implementation is running.[4] For Marked Content, the generated license will contain the following rights:

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[3] The techniques used to "securely bind" a DRM license to a single device include state-of-the-art software obfuscation and tamper resistance technologies protected by pending patents and very closely-held trade secrets.

[4] Similar functionality is already being used by Windows Media Player to encode and record Redbook audio CDs today. For Redbook CDs the Pulse Code Modulated (PCM) data is read

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- The right to "Play" the content on the digital entertainment device to which the initial WMDRM license is bound and stream it simultaneously to a limited number of network streaming devices implementing "Windows Media Digital Rights Management for Network Devices ("WMDRM-ND")." WMDRM-ND technology in the network streaming device will preserve the encryption and limited usage rights of the Marked Content, as described more fully in Section II.B. below. Two examples of "WMDRM-ND" devices are Windows Media Center Extenders (MCX) and Windows Media Connect devices, which are described in more detail below.

- The right to "Copy" the content to authenticated connected media storage devices implementing WMDRM (*e.g.*, Portable Media Center, other PCs, personal video recorders). As described more fully in Section II.B. below, licenses to use copies on connected media storage devices will be generated in the transfer process and will contain the same rights as the original license that was generated when the content was received or recorded in the host device.

In other respects, the WMDRM technology will protect Marked Content in the same manner that it protects other encrypted content. The attached Exhibit 2 contains a diagram showing how WMDRM will work in the Broadcast Flag context.

D. WMDRM Patents

Microsoft has applied for a number of patents covering the WMDRM technology. These patents cover the overall system architecture, key features, file formats, protocols and implementation techniques, including software obfuscation and tamper resistance techniques. As described more fully in Part IV below, the intellectual property license agreement signed by an entity using WMDRM technology authorizes the use of all the necessary claims by Microsoft in its patents that are required from Microsoft to implement, use and distribute the WMDRM technology as permitted under the license agreement.

(continued...)
from the CD and fed though a Windows Media Audio ("WMA") encoder. The compressed output of the WMA encoder is then fed into WMDRM, where it is encrypted. The application (*e.g.*, Windows Media Player) then writes the encrypted compressed content into a Windows Media Format file. Finally, the application uses WMDRM to generate a license for the newly created audio file and the license is bound to the device in which the application is running.

II. LEVEL OF PROTECTION

WMDRM technology has been widely deployed to enable the distribution of highly-valued digital media content over the Internet without risking unauthorized redistribution of that content – the precise goal of the Broadcast Flag. WMDRM protects the security of content by subjecting the content to robust encryption algorithms and ensuring that the content, wherever it may go, cannot be decrypted without the appropriate authorization, consistent with specified usage rights. Thus, content subject to WMDRM can be copied and flow freely between and through devices and still remain protected because the content itself cannot be accessed or used unless the device holding the content has the appropriate digital license or authorization. As described herein, this well-established content protection method can be applied to Marked Content to ensure that its distribution is limited as required by the Commission's rules.

A. Level of Security

Devices applying WMDRM will screen broadcast content for the Broadcast Flag and will subject such content to highly secure encryption techniques as soon as the content is determined to be Marked Content.[5] The experience of WMDRM in the context of Internet content distribution shows that WMDRM encryption is robust and reliably protects content from being used in the absence of the appropriate digital authorization.

WMDRM uses a public-key cryptography-based key management scheme. Content is encrypted and the key is cryptographically bound to the hardware characteristics of

[5] The particular device manufacturer will be responsible for protecting Unscreened Content in the device before screening is performed.

the individual digital entertainment device to which the license is granted.[6] WMDRM for Windows and portable and other media storage devices uses standards-based cryptographic algorithms including:

- RC4 & DES for bulk data encryption (56-bit)
- ECC-ElGamal for public key encryption/decryption (160-bit)
- ECC-DSA for digital signatures (160-bit).

"WMDRM for Network Devices" uses standards based cryptographic algorithms including:

- AES for bulk data encryption (128-bit)
- RSA for public key encryption/decryption (2048-bit).

The implementation of WMDRM is protected using a variety of patent pending and trade secret anti-debugging and software obfuscation and tamper resistance techniques.[7] To provide a further layer of security against class attacks – in which an individual discovers a weakness in a security system that is then exploited in the same manner by other hackers – the Windows implementation of WMDRM provides a feature called "Individualization" that delivers a unique WMDRM implementation and credentials to each user device applying WMDRM. Because each device has unique credentials, a successful hack of one device does not enable the hack of other devices. Moreover, as described more fully below in Sections II.E and II.G, a compromised device can be easily restored by "Re-Individualizing" the device through the delivery, generally over the Internet, of a new, uncompromised implementation and credentials.

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[6] Microsoft (along with the many content owners who rely on WMDRM to protect the security of their content) takes this process of binding a WMDRM license to the authorized device very seriously. For reasons described above in footnote 3, the precise details of how this binding takes place cannot be disclosed.

[7] As noted elsewhere in this Certification, the details of these techniques cannot be disclosed without jeopardizing the security of the WMDRM system.

B. Scope of Redistribution

As described above, the license granting access to Marked Content protected by WMDRM will be bound to the individual device in which the content is first demodulated. The license will also allow the content to be shared with certain WMDRM-enabled network streaming and connected media storage devices as follows:

Connected Storage Devices. As authorized by the applicable license, WMDRM can enable a user to access content on authenticated media storage devices such as additional PCs, portable audio and video players, mobile phones, and personal video recorders.[8] The license generated for Marked Content will allow Marked Content to be copied and used on authenticated media storage devices connected to the original receiving device, through a wired or secure wireless connection, for purposes of transferring the content.[9] During the transfer the WMDRM implementation on the host digital entertainment device will create a license for the content being transferred to the authenticated media storage device; this license will contain the same rights and restrictions as the original license. The new license will be transferred with the

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[8] In January 2004 Microsoft unveiled the WMDRM-enabled Portable Media Center, supported by content available from CinemaNow, EMI Music and Napster. These devices will allow consumers to enjoy high-quality video (including movies and recorded television), digital audio (in Windows Media Audio and MP3 format) and digital photos anywhere, anytime. Press Release, "Leading Digital Entertainment Companies Announce Support for Portable Media Centers at CES 2004," Jan. 7, 2004, copy attached hereto as Exhibit 3.

[9] Microsoft recognizes that as new, innovative devices and network connections emerge in the market it will be necessary to permit the movement of content more broadly among networked devices. To facilitate new uses while continuing to protect broadcast content, it may be necessary to add additional mechanisms to constrain the devices to which content may be copied (*e.g.*, proximity detection). As Microsoft continues to evolve WMDRM to allow for new usage scenarios, it is committed to maintaining the system's ability to adhere to the Broadcast Flag regulations and to prevent unlawful and indiscriminate Internet redistribution in accordance with the Commission's rules.

content and bound to the connected storage device in the same manner as the original license is bound to the host device.

Network Streaming Devices. WMDRM also includes the capability to allow remote playback of protected content on authenticated network streaming devices such as Windows Media Center Extenders and Windows Media Connect devices. Media Center Extender set-top boxes, televisions and X-box gaming consoles, which will be available in late 2004, will allow consumers to access all the digital media content on their Media Center Edition PCs from remote locations throughout the home.[10] Windows Media Connect technology will facilitate consumers' use of home-networked devices (*e.g.*, Digital Media Receivers) from a variety of manufacturers by helping these devices find and access digital media on Windows XP-based PCs.[11]

The license for Marked Content will allow Marked Content to be played on a limited number of authenticated network streaming devices. To enable remote playback, the WMDRM implementation on the host digital entertainment device will create a license for the content being output to the network streaming device; the license will include only the playback (not the copying) rights from the original license. The new license will be bound to the network streaming device in the same manner as the original license is bound to the host device and will be valid only for a single playback session. If the user attempts to play the same content on the

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[10] *See* Press Release, "Microsoft Windows Media Center Extender Technology Delivers Digital Entertainment and the Media Center Experience to Any Screen in the House," Jan. 7, 2004, copy and additional information attached hereto as Exhibit 4.

[11] *See*, Press Release, "Microsoft Announces Windows Media Connect Technology, Enabling Seamless Media Transfer Between Windows XP-Based PCs and Consumer Electronics Devices," Jan. 7, 2004, copy attached hereto as Exhibit 5.

network streaming device again in the future it must re-acquire a license from the host device. WMDRM limits the number of simultaneous playback sessions that a given digital entertainment device may supply to network streaming devices. As the market and WMDRM evolve, additional controls (including, for example, proximity detection) could be used to add additional assurance that the transfer of Marked Content to a network streaming device is not impermissible redistribution.

C. Means of Authentication

WMDRM authenticates implementations and applications using Digital Certificates based on authentication protocols. There are two phases to the authentication process. First, WMDRM verifies that the digital certificate for the implementation or application is valid and trusted (*i.e.*, that the digital signature is valid and was issued by Microsoft). Second, the WMDRM verifies that the implementation or application is authentic by requiring proof that it possesses the private key corresponding to the digital certificate. Once WMDRM is assured of the authenticity and trustworthiness of the implementation or application, it may proceed to issue a license or allow access to content.

D. Upgradeability

WMDRM has been designed from the ground up to provide extensibility and upgradeability. WMDRM is a software system – currently implemented in PCs and other open platform devices incorporating Internet connectivity – that can be upgraded easily in response to security threats and requirements for additional functionality. The mechanism used to upgrade WMDRM in Windows implementations is similar to the "Re-Individualization" process described below in Section II.E in that it takes place via an Internet connection used to access a Microsoft service offering the upgrade.

E. Renewability

Should a security compromise occur, WMDRM provides a mechanism for the renewal of a WMDRM implementation that has been compromised or revoked (as described in Section II.G). Windows users, for example, receive a notification that they require a "Security Upgrade," and from that point new content cannot be recorded and accessed until the upgrade is obtained (although content that was accessible prior to the renewal remains accessible). To perform the upgrade/renewal, the user utilizes a bidirectional Internet connection to contact a service, run by Microsoft, that provides a new WMDRM implementation and credentials. This process is referred to as "Re-Individualization" of a WMDRM implementation. It is contemplated that this type of renewal will be available for WMDRM-enabled devices receiving Marked Content, triggered either by a separate content owner also delivering content to the device or by some other electronic means as required by the Commission's rules governing revocation procedures.

F. Interoperability

The licenses that govern the use of content encrypted by WMDRM control the authorized transmission and recording of the content to other devices. The license generated for Marked Content will not allow the content to be output to any device or technology that cannot protect the security of the Marked Content as required by the Commission's rules. That is, if the WMDRM implementation is not satisfied that the protection level of content to be output to a target device can be assured, then WMDRM will not allow the content to flow to the target device in a usable form. Where the WMDRM implementation in the host device is able to detect an adequate level of protection in the target device, Marked Content will be output to such device as permitted under the license for such content.

When content is transferred between WMDRM-enabled devices, the WMDRM compliance rules ensure a consistent consumer experience regardless of the device on which the content is accessed. Among other requirements, the WMDRM compliance rules specify the meaning of all of the rights that can be specified in the license and how applications or devices must handle content to which those rights apply; all WMDRM-enabled devices are required to support the enforcement of the rights expressed in a WMDRM license in the same way.

G. Revocability

In the event of a security compromise, WMDRM provides two types of revocation capability:

- **WMDRM revocation**. This type of revocation disables content flow to implementations of WMDRM with security vulnerabilities. This type of revocation could be used to revoke either the Microsoft implementation in Windows or a compromised implementation on a particular device or model of a media storage device or network streaming device.
- **Application revocation**. On the Windows platform there is a single shared implementation of WMDRM. Specific applications are authorized by the applicable license agreement to use this implementation in accordance with a set of compliance rules. In the event that an application fails to adhere to these compliance rules or becomes compromised in a way that undermines the security of WMDRM-protected content, the identification information for the compromised application is added to Microsoft's application revocation list, which is issued periodically via the Internet. Once an application is listed on the application revocation list in accordance with established processes and procedures, WMDRM will no longer communicate with that application.

Microsoft, content providers and others have a number of means for determining whether the security of the WMDRM technology has been compromised in any way. For example, a security compromise may be discovered (1) through direct notification that a hack has occurred; (2) by finding or seeing a hack; (3) through information gained from a newsgroup or hack site; (4) by monitoring the evolution of a hostile environment and constantly reviewing the threat analysis; and (5) by staying in close contact with content providers, distributors and

creators to keep abreast of the current state of digital distribution systems. Microsoft is fully committed to continuing using appropriate available information and all means to monitor and respond accordingly to security compromises. Microsoft is always exploring new avenues for obtaining accurate and reliable information and for improving its collaborative efforts with the content industry, security and privacy experts and all stakeholders in this critical area.

III. MARKET ACCEPTANCE

The reliability with which WMDRM secures high-value digital media content against unlawful and indiscriminate redistribution over the Internet is reflected in the wide range of Internet-distributed content, including music and movies from the major labels and studios, to which WMDRM is applied today. Indeed, because WMDRM is so well-tested and has proven so reliable in the Internet space, it is better equipped than many other technologies to meet the specific goal of the Broadcast Flag of preventing the indiscriminate redistribution of content over the Internet.

A. Internet-Distributed Music and Movies

Major studios, including The Walt Disney Company ("Disney"), Paramount Pictures, MGM, Sony Pictures Entertainment, Universal Studios and Warner Bros., have agreed to make movies available for rental or purchase over the Internet, protected by WMDRM, through online service such as Movielink, CinemaNow and iFilm. Major music labels, which are especially concerned about the security of Internet-delivered content, have also agreed to make individual tracks and albums available for online purchase or subscription using WMDRM. Labels including BMG Entertainment, EMI Recorded Music, Sony Music Entertainment, Universal Music Group and Warner Music Group offer WMDRM-protected music through multiple services including Napster, BuyMusic.com, MusicNow, Liquid.com and

MusicMatch. Content providers are also relying on WMDRM to protect content on optical storage devices.[12]

In announcing recently a multi-year agreement to cooperate on long-term digital media initiatives utilizing WMDRM (among other technologies), Microsoft and Disney identified three areas of digital media development enabled by the use of effective digital rights management:

- Creation and secure delivery of compelling high-resolution digital content;
- Overall acceleration of digital content flow to consumers (over networks, on optical media and on devices); and
- Ensuring the seamless flow of secure content between devices, whether portable or located within the home.

Disney expressed confidence in the ability of WMDRM to protect the security of Disney's high-value digital content, noting that licensing WMDRM and cooperating with Microsoft in other digital media initiatives "will accelerate [the] evolution [of content from analog to digital formats] and bring about a vibrant market for legitimate, high-quality entertainment delivered to new categories of end-user devices, such as personal media players and home media center PCs."[13]

Time Warner similarly gave its vote of confidence to WMDRM when it also entered into an agreement with Microsoft to develop long-term digital media initiatives using Windows Media (including WMDRM). The company declared that the new arrangement

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[12] *See* Press Release, "Artisan Home Entertainment to Deliver 'T2: Extreme DVD' Two-Disc DVD Set Including First Windows Media 9 Series High-Definition DVD-ROM; Recently Released DVD 'Standing in the Shadows of Motown' Also Includes Enhanced Windows Media 9 Series DVD-ROM," May 1, 2003, copy attached hereto as Exhibit 6.

[13] Press Release, "Microsoft and Disney Announce Multiyear Agreement to Cooperate on Digital Media Initiatives and for Disney to License Windows Media Digital Rights Management Software," Feb. 9, 2004, copy attached hereto as Exhibit 7.

utilizing WMDRM meant that "all of AOL Time Warner's content businesses – and their industries as a whole – will be able to take full advantage of the digital platform *with a new level of security*."[14]

The confidence these many content providers have shown in the ability of WMDRM to protect the security of content available on the Internet offers a strong testament to the strength and reliability of the technology.

B. Consumer Electronics Devices

As major content providers increasingly rely on WMDRM to protect the security of their Internet-delivered content, manufacturers in turn are incorporating support for the technology in their digital media devices. In addition to being incorporated in some 450 million Windows-enabled PCs, WMDRM capability is currently supported in approximately 60 consumer electronics devices – a number that is likely to grow over time with the explosion in the number of devices supporting Windows Media technology.[15] As recently as last week, the DVD Forum Steering Committee recommended Windows Media Video (VC-9) for inclusion in the next-generation high-definition DVD specification as mandatory for all devices seeking to use the "DVD" logo.[16]

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[14] Press Release, "AOL Time Warner and Microsoft Agree to Collaborate on Digital Media Initiatives and Settle Pending Litigation," May 29, 2003 (emphasis added), copy attached hereto as Exhibit 8.

[15] *See* Press Release, "Microsoft Announces Windows Media Now Supported By More Than 500 Devices, Up 150 Percent Since 2003 CES," Jan. 8, 2004, copy attached hereto as Exhibit 9. While over 500 devices support Windows Media technology, currently approximately 60 of these devices also incorporate WMDRM functionality.

[16] On February 26, 2004, in Tokyo, DVD Forum members voted to adopt Windows Media Video 9 (VC-9) (denoting the underlying compression technology of Windows Media Video 9) as a "mandatory" format for playback devices of the HD DVD Video specification. *See* Ed

(continued...)

These WMDRM-enabled devices span an incredibly broad range of form factors. Consumer electronics devices supported include television sets and home theater systems. Support for WMDRM is also increasingly being incorporated into consumer electronics chipsets. Among the portable devices supporting WMDRM are portable audio players, cellular phones and other wireless handsets and personal digital assistants ("PDAs"). The attached Exhibit 10 provides a representative listing of manufacturers and devices supporting Windows Media and WMDRM.

In European markets, Windows Media and WMDRM are already being used for advanced television services, including broadcast services. In September 2003, Microsoft announced the availability of "solutions to enable network operators to deploy end-to-end Internet Protocol television (IPTV) and video-on-demand (VOD) . . . services . . ., based on Microsoft Windows Media 9 Series and Windows CE .NET." Windows Media technology "enable[s] vendors and network operators to deliver IP-based video with the highest quality possible using the available network bandwidth, whether delivery is over broadband or standards-based broadcast networks."[17] The expanding use of Windows Media and WMDRM in television services is further evidenced by the growing number of set-top box manufacturers, including Biostar, Costron Company Ltd., Pace Micro Technology, Samsung, Tcom & dtvro Co. Ltd., and Wyse Technology Inc., which have incorporated or are considering incorporating Windows Media DRM support into their set-top boxes.

(continued...)
Frauenheim, "Microsoft on every DVD?," CNET News.com, Feb. 27, 2004, available at http://news.com.com/2100-1041_3-5166786.html (last visited Mar. 1, 2004).

[17] Press Release, "Leading IPTV and VOD Providers Deploy Services Powered by Windows Media 9 Series and Windows CE .NET," Sept. 12, 2003, copy attached hereto as Exhibit 11.

IV. LICENSING POLICIES AND PROCEDURES

A. WMDRM is Available for Licensing on Reasonable and Non-Discriminatory Terms.

Windows Media DRM is available for licensing as part of the Windows Media Format Software Development Kit (WMF SDK) and the Windows Media Rights Management Software Development Kit (WMRM SDK). The WMF SDK is provided for building Windows client applications that acquire DRM licenses and access content based on rules defined in the DRM licenses, while the WMRM SDK is provided for building DRM License Servers, based on Windows Server 2003, that issue DRM licenses to applications developed using the WMF SDK. These SDKs are included at no additional cost in the Windows client and server licenses, although use of the WMDRM SDKs requires executing an additional agreement containing specific terms and conditions, including appropriate compliance requirements, related to the use of the WMDRM technology. A version of WMDRM can also be licensed under the license agreement for Windows CE, allowing manufacturers to build a wide range of devices supporting WMDRM. The terms of this agreement are consistent with the DRM addendum for the WMF SDK.

The WMF SDK and WMRM SDK license agreements are available on reasonable and non-discriminatory (RAND) terms that are broadly and publicly disclosed and that are offered in a manner consistent with the Commission's general principles of reasonable and non-discriminatory treatment. These agreements license the use of all the necessary claims by Microsoft in its patents that are required from Microsoft to deploy the technology in accordance

with the terms of the applicable agreement.[18] With respect to the scope of the license granted, the WMDRM license agreements differ from some other technology license agreements in that they authorize third parties to integrate the *use* of WMDRM in specified applications and devices and the *distribution* of WMDRM as an integrated component in those applications and products. The license agreements do not, however, currently authorize the *implementation* of WMDRM. As part of Microsoft's efforts to ensure the security of the WMDRM system, Microsoft performs the implementation of WMDRM for licensed devices (*i.e.*, Microsoft writes the WMDRM source code that is then integrated into third party devices in machine-readable form). Accordingly, the license agreements covering the WMDRM technology need not and do not include detailed implementation specifications or robustness requirements.[19] Copies of the licenses are attached hereto as Exhibits 12 through 15.

B. Compliance Rules

Once a company has executed the required license agreements, it receives a "DRM Stub lib" (*i.e.*, the credential required for the licensed application to authenticate with the Microsoft WMDRM implementation) allowing the licensed application to access DRM content via the WMF SDK. Licensed applications must comply with the terms of the license and the "DRM Addendum to the WMF SDK" governing the conditions under which licensed applications may access WMDRM-protected content. The DRM stub lib, integrated into the

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[18] The scope of the patents licensed in the WMDRM license agreements is equivalent to that given to third parties under other copy protection technologies with which the Commission is familiar, such as 5C DTCP and DFAST, and typical of patent licensing in the standards area generally.

[19] Microsoft is considering moving towards authorizing third party implementation of WMDRM in the future, provided that the security concerns can be resolved and an effective compliance program put in place to ensure the continued security of the WMDRM system.

licensed application, is used to establish a secure authenticated channel with the WMF SDK. A unique ID is assigned to each application and the security level of the application is specified. For applications handling Marked Content, the security level will be equivalent to the security level currently applied to commercial content delivered over the Internet today, including Video-on-Demand and movie rental services from providers such as CinemaNow and Movielink.

In the typical scenario, the Windows Media DRM application first checks whether the licensed application has been revoked by Microsoft or excluded by the content provider for failure to comply with the terms of the DRM license agreement. If not, the application is considered trusted and the client next confirms that the application's security level is sufficient and the requested action (*e.g.*, Play, Copy, etc.) is authorized. If permitted, the WMDRM implementation may then pass usable audio/video content to the application.

C. Change Provisions

Microsoft anticipates periodically updating and enhancing the WMDRM technology to eliminate potential security breaches and/or to enhance WMDRM features. These updates will be made available to all licensees in good standing (*i.e.*, who have not breached the previous licensing agreement by producing or distributing a non-compliant or compromised application), typically through a new licensing agreement containing updated licensing terms.

As a general matter, the terms of a license agreement will remain the same throughout the license term. However, after the license agreement expires, any updates Microsoft has made to the terms of its DRM license agreements must be incorporated in a new license agreement if the licensee wants to ship WMDRM-enabled products incorporating

updated or new functionalities or to maintain an existing service using new WMDRM updates or functionalities.[20]

D. Approval Procedures for Downstream Transmission and Recording Methods

Content providers today can specify the extent to which WMDRM-protected content may be passed to consumer electronics devices running a version of Windows Media DRM. Sections I.B and II.B above describe the extent to which Marked Content will be transferable to WMDRM-enabled devices.

Microsoft contemplates both authorizing other content protection systems for outputs of WMDRM-protected content and adopting emerging standards enabling interoperability, such as the MPEG-21 Part 5 Rights Expression Language. Until interoperability standards are officially approved and available for use, Microsoft anticipates developing a process pursuant to which developers of third party content protection systems may apply to Microsoft for consideration as authorized outputs of WMDRM-protected content. This process will include a review of the overall security of the third party implementation, the functionality (including the policy language) supported by the technology and the appropriate usage of the technology (*e.g.*, rendering vs. storage). Some technologies that are not sufficiently secure for high-level content may be authorized as offering lower level security (*i.e.*, below the security level required for commercial content delivered over the Internet today), but the usage rights governing Marked Content will specify that such content may not flow to a lower level system that does not assure content security above a specified level.

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[20] If a licensee chooses not to execute the updated license agreement, it can continue to ship products incorporating the WMDRM functionalities covered by the prior license agreement.

V. OTHER RELEVANT FACTORS

Approving WMDRM as an output and recording technology for use with the Broadcast Flag will also facilitate the continued evolution of open platform devices (such as PCs) into fully-functional home digital entertainment devices. The flexibility of open platform devices will both enhance and change the consumer entertainment experience for the better. As described in Microsoft's filings in the Commission's cable plug-and-play proceeding, PC-based entertainment devices such as the Windows XP Media Center Edition allow consumers to efficiently organize and access all their digital media for maximum enjoyment.[21] Making the full range of open platform devices part of the transition to digital broadcast television will hasten the day when that transition is complete, and thus will benefit consumers, the broadcast industry, other spectrum users and the public interest.

Another benefit of accessing entertainment through open platform devices is will be new ways of providing accessibility for the disabled, who will be able to take advantage of future accessibility technologies developed for the PC. For example, Windows Media DRM is a component of the Windows Media format, which today includes accessibility features such as synchronized text to make content accessible to hearing impaired consumers. As Microsoft and others develop additional accessibility features and technologies for the PC platform, disabled consumers should eventually be able to apply those features and applications to all digital media handled by the PC. Approval of WMDRM for use with the Broadcast Flag will help ensure that

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[21] Attached as Exhibit 16 are excerpts from an *ex parte* filing by Microsoft and Hewlett-Packard and from IT Industry comments that describe in detail the important role that open platform devices play today, and will play in the future, in the home digital entertainment environment.

digital broadcast television is among the digital media that benefits from such added accessibility.

CONCLUSION

Based on the foregoing, the undersigned, on behalf of Microsoft, certifies that the contents of this Certification are accurate and true to the best of his knowledge and that Windows Media Digital Rights Management technology is appropriate for use in covered digital entertainment devices to give effect to the Broadcast Flag. When implemented in a compliant digital entertainment device receiving digital broadcast content, WMDRM will prevent the unlawful and indiscriminate redistribution of Marked Content by ensuring, in accordance with the Compliance Requirements set forth in Section 73.9003 of the Commission's Rules, that such Marked Content is not transmitted or recorded in usable form to or on devices or outputs not protected by an approved digital output protection technology or digital content recording technology. Approving WMDRM as an output and recording technology for use with the Broadcast Flag will facilitate the deployment of open platform devices (including but not limited to PCs) as fully-functional digital entertainment devices in the home.

Andrew Moss
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March 1, 2004

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
Federal Communications Commission
Washington, D.C. 20554

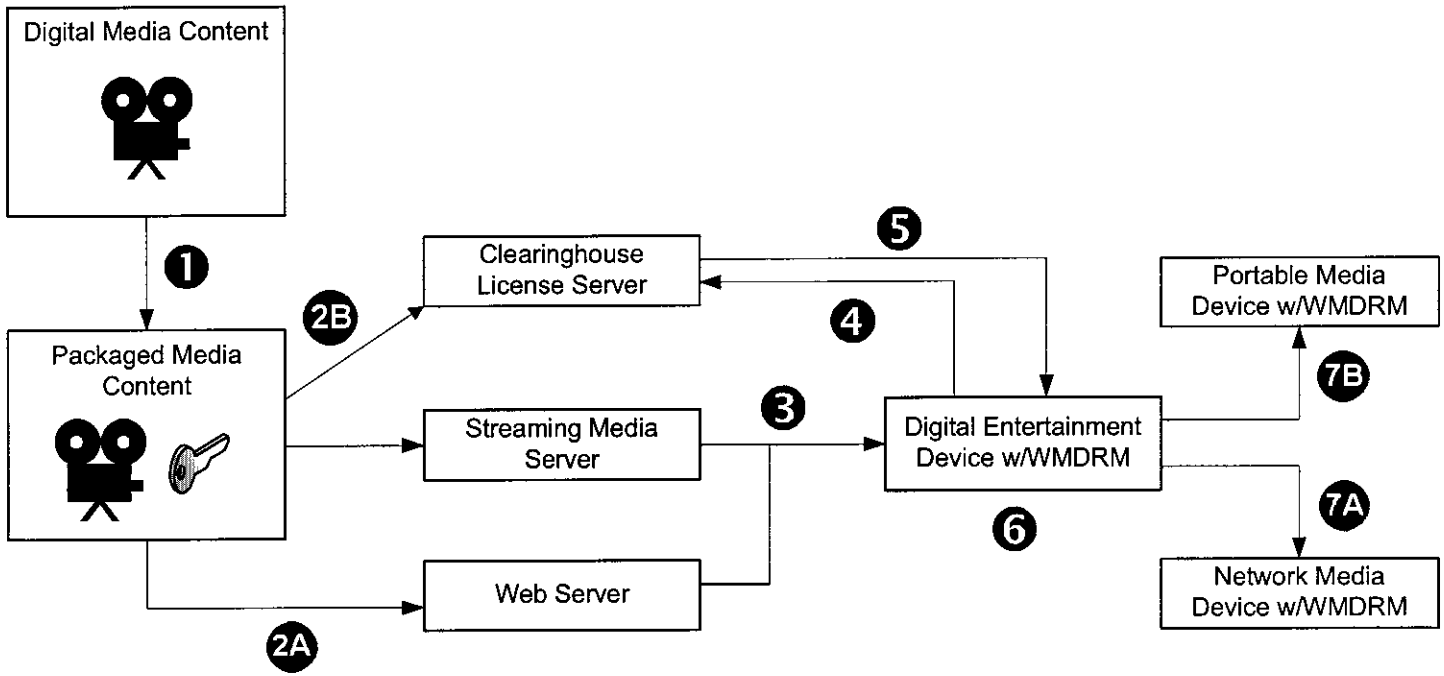
In the Matter of	)	
	)	
Digital Broadcast Content Protection	)	MB Docket No. [redacted]
	)	
Certification of Windows Media	)	
Digital Rights Management Technology	)	
for Use with Broadcast Flag	)	
	)	
To: The Commission	)	

EXHIBITS

March 1, 2004

INDEX OF EXHIBITS

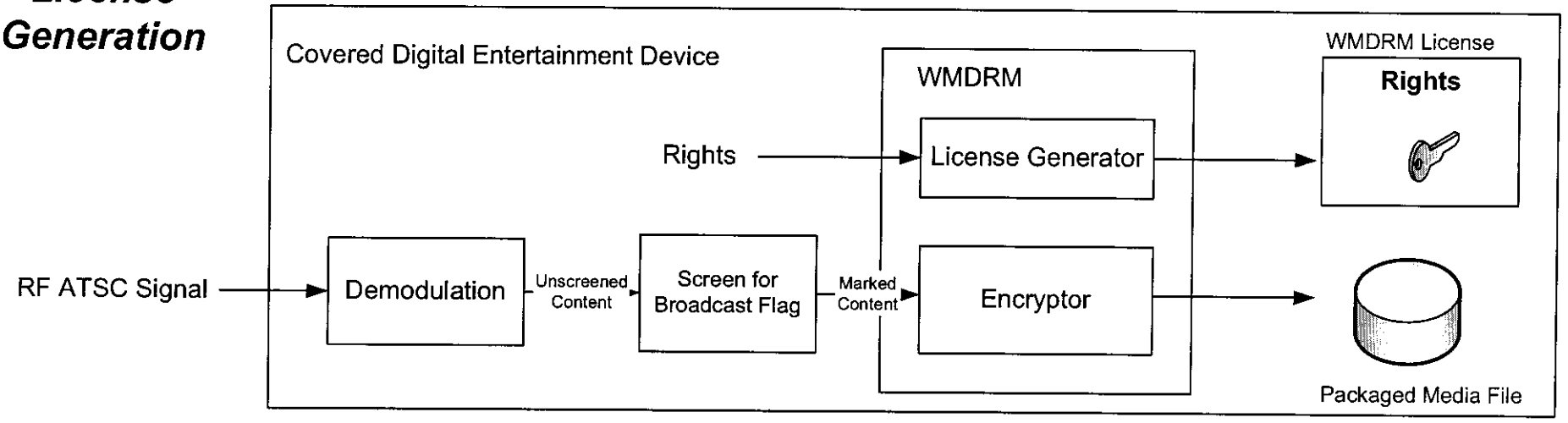
Windows Media DRM
Online Application



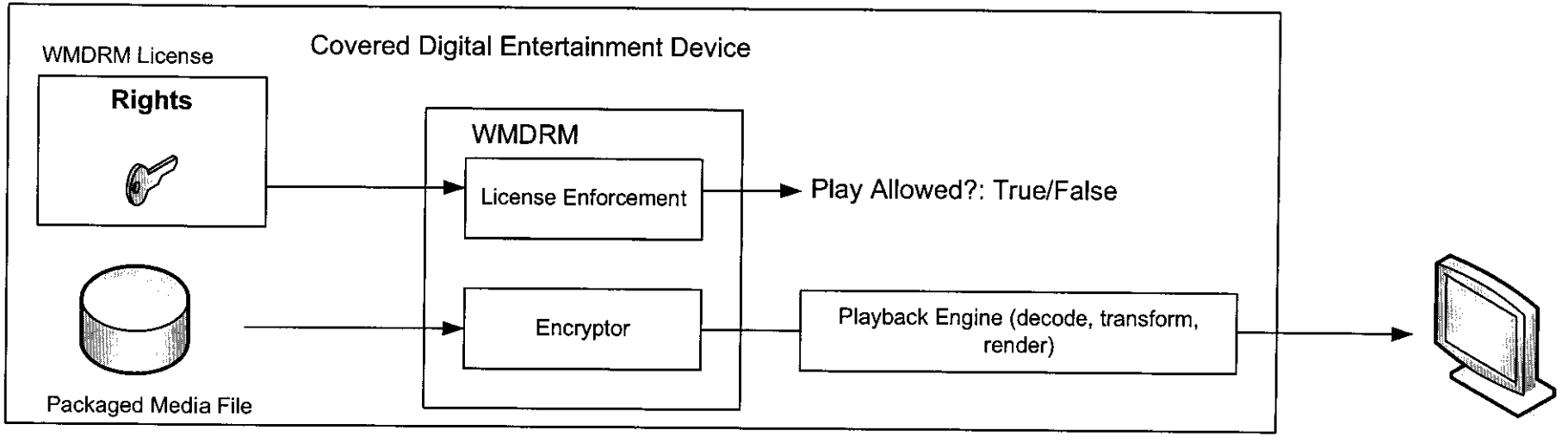
1. Encrypt media content
2A. Post encrypted content
2B. Deliver license specifying rights
3. Deliver encrypted content
4. Request license
5. Deliver license
6. Render content on device as permitted by license
7A. Stream content for remote playback on networked media device
7B. Transfer content to portable media device if permitted by license

Windows Media DRM
Broadcast Flag Application

License Generation



Playback



For Release 7 p.m. PST
Jan. 7, 2004

Leading Digital Entertainment Companies Announce Support For Portable Media Centers at CES 2004

Bill Gates Unveils First Working Portable Media Centers

LAS VEGAS — Jan. 7, 2004 — Microsoft Corp. tonight announced at the 2004 International Consumer Electronics Show (CES) that leading digital entertainment companies CinemaNow Inc., EMI Music and Napster LLC® will support Windows Mobile™ software for Portable Media Centers, indicating that the new class of device will change the way people enjoy movies, recorded television, photos and music. In addition, in his keynote address at CES, Microsoft Chairman and Chief Software Architect Bill Gates unveiled and demonstrated the first working Portable Media Centers from Creative Labs Inc. (a subsidiary of Creative Technology Ltd.).

"Consumers increasingly want to have their media with them wherever they are. It does you little good to have music, videos or pictures at home when the majority of time you want to use or share them is when you are away," said Rob Enderle, principal analyst for the Enderle Group. "Portable Media Centers, particularly when they are coupled with PC-based Media Centers, download services, personal video recorders and digital still/movie cameras, will change the way people acquire, use and share their multimedia experiences. As a result, Portable Media Centers are expected to be one of the hottest emerging products in the fall of 2004."

"We've seen an explosion in recent years in the way that people use their PCs for enjoying digital entertainment," said Todd Warren, general manager of the Embedded Devices

Group at Microsoft. "Companies like CinemaNow, Creative Labs, EMI Music and Napster are helping us deliver on consumers' increasing desire to transfer those experiences quickly and securely to portable devices to enjoy anywhere, at any time."

Portable Media Centers, which will be available in the second half of 2004, are being demonstrated at CES in Microsoft booth No. CEN8323 and Creative Labs' booth No. CEN13615.

"Devices like the Creative Zen Portable Media Center demonstrate that Microsoft is making great strides in ushering in a new era of digital entertainment," said Sim Wong Hoo, chief executive officer at Creative Technology Ltd. "In minutes, people can transfer video, music and photos from a PC, allowing them to enjoy their entertainment in new and exciting ways."

High-Quality Video

Portable Media Centers are the answer for any traveler who can't stand to watch one more in-flight movie. To help ease the pain, CinemaNow will make available titles from its library of more than 4,200 feature films, for rent or "download-to-own." The latter option is a new capability that will allow people to purchase and download a permanent copy of a digital file for unlimited playback on the Portable Media Center. The Portable Media Centers' easy-to-view screen takes advantage of the quality of Windows Media® 9 Series.

New smart sync technology makes transfer from a Windows® XP-based PC to the Portable Media Center fast and easy, and the small file sizes of Windows Media Video (WMV) let users travel with more videos, pictures and music than is possible on other formats, allowing them to store and play hundreds of hours' worth of high-quality audio and video on the go. In addition, when coupled with Windows XP Media Center Edition, Portable Media Centers will

allow people to easily and quickly record and transfer their favorite television programs and enjoy them on the go.

"People are hungry for an easy way to make movies as portable as digital music, and Microsoft has figured out how to make that a reality for everyone," said Curt Marvis, chief executive officer of CinemaNow. "We will make our service available to people who own a Portable Media Center because we share the belief that a revolution in portable digital entertainment can only happen in an open environment where the protection of intellectual property is a priority."

CinemaNow holds the Internet distribution rights to the most extensive and comprehensive library of feature films, from more than 150 licensors including 20th Century Fox Film Corp., The Walt Disney Co., MGM Inc., Miramax Film Corp., Warner Bros. Entertainment Inc., Lions Gate Entertainment Corp. and others. CinemaNow films are available on a pay-per-view, subscription basis, and its new download-to-own capability will allow people to buy the hottest new movie, transfer it securely to the Portable Media Center and view it forever.

More Than Music on the Go

Windows Mobile-based Portable Media Centers' support for Windows Media Audio 9 (WMA) and MP3 digital media formats will enhance the way people enjoy their digital entertainment, allowing them to bring their entire world of music on the road:— music, album art, playlists, song ratings and, in the future, music videos. Because Portable Media Centers work with the widest variety of music download services, people will be able to easily transfer content using existing subscriptions with companies such as Napster.

Napster, which became the first music service to announce support of Portable Media Centers at launch, offers the world's largest collection of digital music, with a personalized

experience designed so music fans can easily access tracks at a low price. Napster's support of Portable Media Centers ensures that customers will have access to all their purchased music away from their Windows XP-based PC. In the future, downloads of promotional music videos will give consumers an even better portable entertainment experience.

"Portable Media Centers will give Napster's library of music tracks an even broader audience," said Mike Bebel, president and chief operating officer of Napster. "Between our music service and the potential for a downloadable music video service, Napster will help artists be heard and even seen on portable devices, transforming the world of music yet again."

Subscription services aren't the only entertainment companies getting behind Portable Media Centers. At CES, EMI Music became the first major label to announce support of Portable Media Centers.

"We're in the digital entertainment age, and EMI is committed to providing the best digital music available to people on the Internet," said Ted Cohen, senior vice president of D3 — Digital Development & Distribution — at EMI Music. "Portable Media Centers will allow our customers to have secure access to their music and videos from EMI Music any time and anywhere."

Using Windows Media Audio and Video 9 Series compression technology, consumers can quickly and easily transfer up to 175 hours of video, 10,000 songs or as many as 100,000 pictures* — enough to chronicle a lifetime — to Portable Media Centers from their Windows XP-based PC.

The Best Consumer Electronics Partners

Device manufacturers Creative Labs, iRiver International, Samsung Electronics, SANYO Electric Co. Ltd. and ViewSonic Corp. have agreed to build Portable Media Centers. Working prototypes from Creative Labs can be seen at CES.

More Access to Digital Media at Home and on the Go

One of the key pillars in Gates' keynote address was the announcement of Windows Media Center Extender Technologies, software that will power a new generation of devices on which people can access their Windows XP Media Center Edition PC-based digital entertainment — recorded television shows, photos, movies and music — in more places around the home, including via set-top boxes, Xbox® video game systems and televisions. Windows Mobile-based Portable Media Centers help extend this experience by allowing people to enjoy that same entertainment anywhere and at any time.

Windows Mobile software for Portable Media Centers is built on Windows CE .NET, the real-time operating system designed to power the next generation of smart mobile and small-footprint devices.

About Windows Mobile Software for Portable Media Centers

Windows Mobile software for Portable Media Centers (http://www.microsoft.com /portablemediacenters/) is the platform that will power the next generation of portable digital media entertainment devices. As part of the Windows Mobile-based device family, Portable Media Centers make it easy for people on the go to enjoy their Windows XP-based digital videos, home movies, recorded television shows, photos, music and album art. Expected to be available in 2004 from Creative Labs, iRiver International, SANYO, Samsung Electronics and

ViewSonic, 40GB devices will be able to hold up to 175 hours of video, 10,000 songs and as many as 100,000 pictures — enough to chronicle a lifetime.

About Microsoft

Founded in 1975, Microsoft (Nasdaq "MSFT") is the worldwide leader in software, services and Internet technologies for personal and business computing. The company offers a wide range of products and services designed to empower people through great software — any time, any place and on any device.

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* Depending on bit rate and /resolution; based on a Portable Media Center with a 40GB hard drive.

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Jan. 7, 2004

Microsoft Windows Media Center Extender Technology Delivers Digital Entertainment and the Media Center Experience to Any Screen in the House

Consumers to Enjoy Media Center Edition Experience on TVs Throughout Their Homes by Holiday 2004

LAS VEGAS — Jan. 7, 2004 — This evening during his keynote address at the 2004 International Consumer Electronics Show (CES), Microsoft Corp. Chairman and Chief Software Architect Bill Gates unveiled Windows® Media Center Extender Technology. The software will power a new generation of products that will extend the Media Center Edition PC experience allowing consumers to access their favorite digital entertainment, such as live and recorded television, photos, movies, and music that reside on their Windows XP Media Center Edition PC, from any room in the home — regardless of where the PC is located. Media Center Extender Technology will not only provide access to rich content and services, but will enable devices throughout the home to utilize the full processing and storage capabilities of the PC creating new opportunities for services and providing unprecedented choice and access to content for consumers

Alienware Corp., Dell Inc., Gateway Inc., HP, Samsung Electronics Co. Ltd., Tatung Co. and Wistron Corp. are among the industry-leading original equipment manufacturers (OEMs) and original design manufacturers (ODMs) working with Microsoft to bring these products to market in a variety of hardware form factors, including set-top boxes and televisions, by the 2004 holiday season. Consumers can enjoy the benefits of Media Center Extender technology through a set-top box connected to their television or can purchase a new television with this

technology fully integrated. In addition, Microsoft announced the Xbox® Media Center Extender Kit, which will combine an Xbox DVD title with a dedicated remote control, allowing consumers to extend their Windows XP Media Center Edition experience around the home using their Xbox game console.

"Consumers are telling us that they don't want to be tied to the room where their PC lives to look at their digital pictures or view a program recorded on their Media Center PC," said Joe Belfiore, a general manager in the Windows eHome Division at Microsoft. "With industry partners, we are meeting this demand by developing innovative products that give consumers the freedom to enjoy their digital entertainment experiences anywhere in the home."

Unprecedented Choices for Enjoying Entertainment in the Home

Media Center Extender technology will enable the distribution of rich digital content and experiences that reside on a Windows Media Center PC to television displays in any room in the home. With a Media Center Extender product, consumers who are using a Media Center PC to listen to music, record television programs, watch photo slide shows and home videos, or download movies on demand can enjoy these experiences on a television in one room even if their Media Center PC is being used at the same time by a family member in another room.

By combining the simplicity of a unified digital media library on the Media Center PC with the power of multiple Media Center Extender products that access the Media Center PC simultaneously, Microsoft and industry partners are delivering the most comprehensive, integrated and easy-to-use digital home entertainment solution to consumers.

"Of the products that are expected for the fourth-quarter holiday season in 2004, devices that allow you to distribute your recorded television programs, movies, digital music and photos throughout the home and on the go appear to have the greatest potential for the hit of the season," said Rob Enderle, principal analyst for the Enderle Group. "What will make the

difference is a high level of integration between the PC and displays throughout the home as is evident with Microsoft's Windows XP Media Center Edition and Windows Media Center Extender technology. This integration translates into extreme ease of use, and extreme ease of use remains the one critical aspect for products targeted at the general consumer."

Entertainment That Tunes Into the Consumer

In addition to providing consumers with a choice of 40 Media Center Edition PCs in a wide range of styles and prices, Microsoft in September released the Media Center Edition 2004 Software Development Kit, which has received overwhelming interest. More than 8,500 developers have downloaded the kit, enabling them to begin building innovative applications and services for use with a Media Center PC. For example, ESPN is offering a way for users of Media Center PCs to download directly from the Internet instant, high-quality, full-screen ESPN Motion video and watch it on their television or PC screen. ESPN Motion videos include game highlights, interviews, breaking news, classic moments in sports and more. Microsoft also is working with Kodak's wholly owned subsidiary, Ofoto, to develop a photo-imaging application that will let Ofoto customers access and view their digital images and share those images to their Ofoto account at any time from their television or PC display through the convenience of a remote control.

Extending content choices for consumers, Microsoft today also announced 16 new films in Windows Media® High-Definition Video (WMVHD) from Artisan Entertainment, IMAX Corp., National Geographic Society and others, bringing users of Media Center Edition a home-theaterlike experience with 5.1 channel surround sound and video — up to six times the resolution of a standard DVD.

Throughout CES, Microsoft will demonstrate the latest products built around Windows XP Media Center Edition 2004 in a specially constructed NextGen 04 Demonstration Home

outside the Las Vegas Convention Center. Show attendees can tour this seven-room facility through Sunday, Jan. 11, to see the latest in connected home technology and meet with Microsoft representatives.

Media: Here, There and Everywhere

In addition to enabling consumers to take advantage of rich digital content throughout the home, leading consumer electronics partners are working with Microsoft to develop Portable Media Center devices, which will make it easy for people on the go to enjoy their digital videos, home movies, recorded television shows, photos, music and album art from their Windows XP computer. At CES Microsoft announced that Gateway has been added to the growing list of partners that includes Creative Labs Inc., iRiver International, Samsung Electronics Co. Ltd., SANYO Electric Co. Ltd. and ViewSonic Corp. Microsoft also announced that leading digital entertainment companies CinemaNow and Napster LLC will support the Portable Media Center platform. Portable Media Center devices support Windows Media Audio and Video 9 Series to ensure the highest possible audio and video quality and to maximize the amount of content that can be stored on the device.

About Windows XP Media Center Edition

Microsoft® Windows XP Media Center Edition evolves the home PC with easy-to-use integrated digital entertainment that consumers can enjoy when and how they want. It combines the functionality of traditional PC applications such as Microsoft Word and Excel with the ability to enjoy music, television, personal video recording, pictures, digital video and DVD with remote-control access. Windows XP Media Center Edition 2004 features the quality and compression of Windows Media 9 Series, which helps users create, manage and enjoy more high-quality digital music and video than before.

About Microsoft

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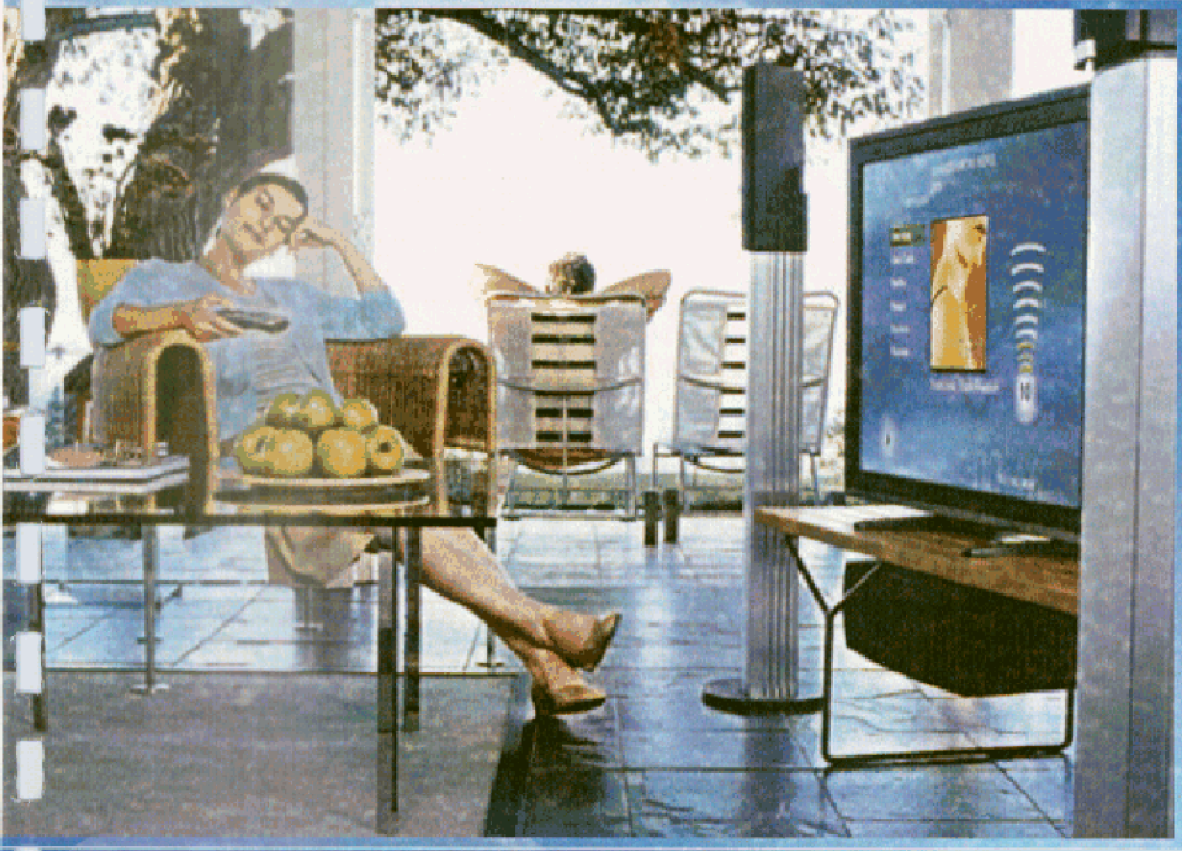
Microsoft

Windows Media Center Extender



Entertainment that tunes into you—throughout the home.

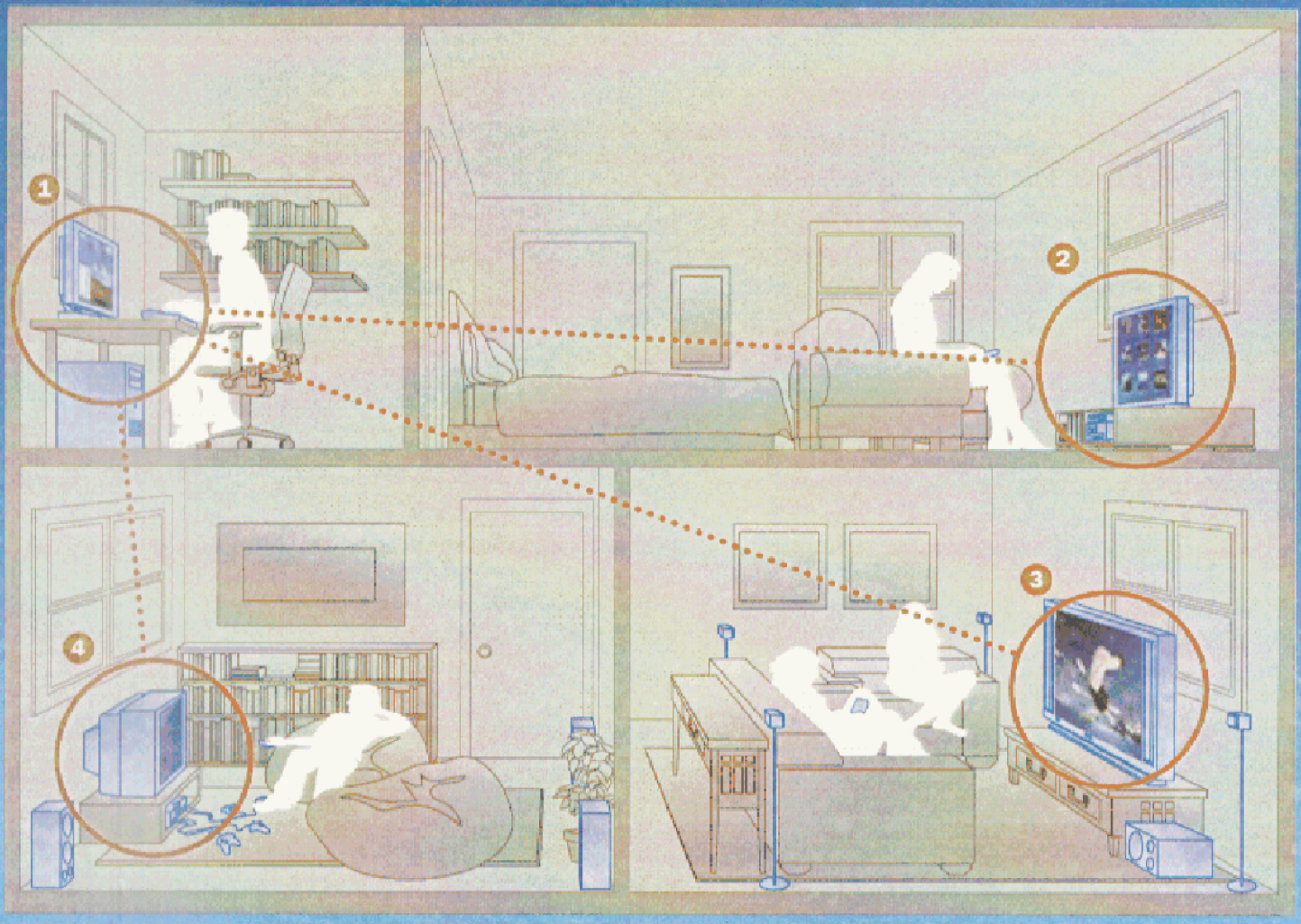
Windows Media Center Extender products deliver the integrated digital media experiences of your Windows XP Media Center Edition PC—TV, movies, music, photos, and more—across additional rooms in your home so you can enjoy digital entertainment when, where, and how you want.

Microsoft Windows xp Media Center Edition

Microsoft

Windows Media Center Extender

Multiple rooms. Multiple media. One Media Center PC.



Windows XP Media Center Edition

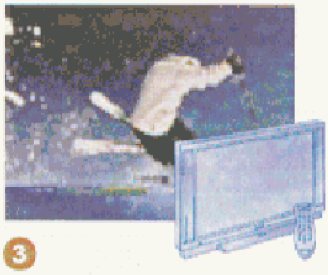
1

Windows XP Media Center Edition, available pre-installed on Media Center PCs, enables advanced computing plus easy-to-use integrated digital entertainment. All your digital media is in one place, accessible using a single remote control.

Windows Media Center Extender technologies will be available in several product categories.

2

Windows Media Center Extender hardware products deliver the content, services, and user interface of your Windows XP Media Center Edition PC to remotely-located TVs in the home. Convenient and easy to use, Media Center Extender products offer a seamless experience between home entertainment devices.



3

Media Center-ready TVs come out of the box with built-in Windows Media Center Extender technologies. These TVs extend the integrated home entertainment experience from the Media Center PC into additional rooms through simple wireless or wired configurations.

4

The Xbox» Media Center Extender Kit enables you to enjoy the entertainment experience from your Media Center PC through a connected Xbox game console.

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For Release 7 p.m. PST
Jan. 7, 2004

Microsoft Announces Windows Media Connect Technology, Enabling Seamless Media Transfer Between Windows XP-Based PCs And Consumer Electronics Devices

Technology Wins Early Support From Leading Consumer Electronics Companies, PC OEMs and Content Service Providers

LAS VEGAS — Jan. 7, 2004 — Today at the 2004 International Consumer Electronics Show (CES), Microsoft Corp. announced Windows® Media Connect, technology designed to enable hardware manufacturers to easily develop devices such as Digital Media Receivers (DMRs), which have rich functionality for playing digital media files stored on personal computers over home networks. A broad range of industry leaders have announced their support of this upcoming technology, including leading PC OEMs and consumer electronics device manufacturers including Arcadyan Technology Corp., Creative Labs, Dell Inc., Mediabolic Inc., PRISMIQ Inc., Rockford Corp., Roku, Simple Devices Inc. and Toshiba. Leading content service providers such as LAUNCH Music on Yahoo!, MusicNow (formerly FullAudio), and Napster also endorsed Windows Media Connect for its ability to extend the reach of their content and services to a new range of consumer devices. Available in 2004, Windows Media Connect technology will overcome two critical hurdles faced by networked media devices today: compatibility between proprietary devices and ease of access to content stored on the PC.

"With the growing popularity of legitimate music and video services and the exponential growth of digital media collections on Windows-based PCs overall, Windows Media Connect solves a looming home networking problem for consumers," said Amir Majidimehr, corporate

vice president of the Windows Digital Media Division at Microsoft. "The industry support we're announcing today is evidence of the benefits that Windows Media Connect will provide to manufacturers and consumers alike."

Eighty-two percent of home PC users in the United States already use their PCs for digital media activities,* leading to the emergence of a new class of related networked devices, such as DMRs, in the home. For these devices to best meet the needs of consumers, they must be able to automatically discover supported content on the PC and provide seamless playback of that content. Windows Media Connect helps these devices find and access digital media on Windows XP-based PCs — something the devices are often not well equipped to do out of the box.

Leading DMR manufacturers Arcadyan, Creative, Mediabolic, PRISMIQ, Rockford, Roku and Simple Devices, and consumer electronics (CE) manufacturer Toshiba are announcing their support for Windows Media Connect in future versions of their products.

"The ability to offer consumers access to their photos, music or videos anywhere in the home has been talked about before, but doing it in a way that is seamless to the consumer is really the focus here," said Takashi Kamitake, general manager of Core Technology Center at Toshiba Digital Media Network Company. "Toshiba's strategy is that CE devices and PCs are harmonized by Home Network, and given an inventive new usability. Windows Media Connect helps harmonize CE devices and PCs without adding any complexity to a consumer's familiarity with their PC or their home network."

PC OEM Dell Inc. also announced support for Windows Media Connect and is encouraging consumer electronics manufacturers to make standards-based networked media products that are compatible with Microsoft's new technology.

"We are committed to offering our customers simple yet effective ways to integrate digital content that resides on their PCs with other devices in the home," said Tim Mattox, vice president of the client product marketing group at Dell. "With standards-based technology like Windows Media Connect, we can provide our customers an intuitive way to share digital content throughout their homes, bringing them closer to our vision of the digital home."

In addition, leading content service providers LAUNCH Music on Yahoo!, MusicNow (formerly FullAudio) and Napster see Windows Media Connect as a key technology to enable their customers to enjoy music anywhere, because it enables streaming and playback of protected content from Windows Media® Audio (WMA)-based music services.

"We are supportive of Microsoft's initiative to enable legitimate music services to work with home networks and allow consumers to enjoy their music in any room of their house," said Laura Goldberg, senior vice president of operations at Napster.

Windows Media Connect supports interoperability standards such as Universal Plug and Play (UPnP) and HTTP, and is planned to conform to the guidelines under development by the Digital Home Working Group. This will make it easy and cost-effective for consumer electronics companies to build support for Windows Media Connect into their products while following industry standards for home networking products. Windows Media Connect supports popular media formats including WMA, MP3 and PCM for audio; Windows Media Video (WMV), MPEG-2, MPEG-1 and AVI for video; and JPEG, GIF, PNG, BMP and TIFF for images.

In addition to Windows Media Connect, consumers have other choices for enjoying digital media in the home. For example at CES 2004, Microsoft also announced the Windows Media Center Extender Technology and Xbox® Media Center Extender Kit, which will enable

consumers to enjoy the rich Windows XP Media Center Edition experience and Windows Media Audio and Video content throughout the home.

About Microsoft

Founded in 1975, Microsoft (Nasdaq "MSFT") is the worldwide leader in software, services and Internet technologies for personal and business computing. The company offers a wide range of products and services designed to empower people through great software — any time, any place and on any device.

##########

* Source: Microsoft internal research

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Artisan Home Entertainment to Deliver "T2: Extreme DVD" Two-Disc DVD Set Including First Windows Media 9 Series High-Definition DVD-ROM

Recently Released DVD "Standing in the Shadows of Motown" Also Includes Enhanced Windows Media 9 Series DVD-ROM

SANTA MONICA, Calif., and REDMOND, Wash. — May 1, 2003 — Artisan Home Entertainment Inc. today announced it will issue "Terminator 2: Judgment Day (Extreme Edition)," a two-disc DVD set that will feature a digitally remastered theatrical version of the film in high-definition video and full surround sound on a single DVD-ROM in Microsoft® Windows Media® 9 Series. The cutting-edge high-definition "T2: Extreme DVD" will offer consumers using today's powerful Windows XP-based computers nearly three and a half times the resolution of standard DVD video and will include previously unseen extras. "T2: Extreme DVD" will be available in the United States and Canada on June 3 for a suggested retail price of $29.98.

"Artisan Home Entertainment has always been a leader in the marketplace when it comes to meeting consumer demand, and as those demands become more and more sophisticated, we are proud to take the lead once again," said Steven Beeks, president of Artisan Home Entertainment. "With this exciting high-definition version of 'T2,' Artisan will provide consumers with the stunning visual and surround-sound capabilities of Windows Media 9 Series so they can experience critically acclaimed films like never before."

"Artisan is leading the way to a new level of entertainment experiences, delivering 'T2' fans high-definition video and 5.1 surround sound on a single DVD-ROM," said Dave Fester, general manager of the Windows Digital Media Division at Microsoft Corp. "When the Terminator said, 'I'll be back,' who knew that it would be with such stunning clarity?"

The groundbreaking "T2: Extreme DVD" contains an abundance of extra features, offered on both the standard DVD and the revolutionary high-definition DVD-ROM. In this new edition, the critically acclaimed, multiaward-winning film that set the visual tone for every action film to follow has been digitally remastered frame by frame to make it look better than ever. Extra features include 16 minutes of additional footage never seen in theaters; all-new audio commentary with director and writer James

Related Links

- Windows Media Newsroom on PressPass

Feature Story:

- Q&A: Digital Directions from New Windows Digital Media G.M. - May 1, 2003

Press Release:

- Microsoft Announces Immediate Availability of Windows XP "Do Amazing Things" DVD With High-Definition Content, Great Software and Fun Tutorials - May 1, 2003

Microsoft Resources:

- "Do Amazing Things with Windows XP" DVD-ROM
- Windows Media 9: High Definition Video

Cameron and co-writer William Wisher; an extreme interactive mode with graphic commentary and rare behind-the-scenes footage; an all-new documentary on the role of "T2" in the evolution of digital effects and modern filmmaking; and a special-effects studio where viewers can morph their imported images into a T-1000 or a T-800 Terminator.

In addition, Artisan Home Entertainment's "Standing in the Shadows of Motown" two-disc DVD package, released April 22, includes a Microsoft Windows Media 9 Series enhanced DVD-ROM secured with Windows Media Digital Rights Management. This exciting technology presents the movie in a high-resolution format for PC viewing, offering almost two times greater resolution than standard DVD video. "Standing in the Shadows of Motown" is available for the suggested retail price of $22.98.

The "Standing in the Shadows of Motown" DVD also offers a Virtual Recording Studio extra feature with software from Sonic Foundry that will enable viewers to actually compose and record their own hit tune by arranging original music created exclusively for the DVD by the Funk Brothers, the musicians responsible for the extraordinary sound of Motown and the focus of this extraordinary film. The impressive software allows viewers to create endless variations and even add their own vocals and instruments. The DVD is loaded with several other intriguing extras, including featurettes, commentary, music videos and a series of this year's short films from BMWFilms.com.

About Artisan

Artisan Entertainment Inc. is the leading independent producer and distributor of theatrical, television and home entertainment product. The Company coordinates its business activities through two wholly owned operating divisions, Artisan Pictures and Artisan Home Entertainment. The Artisan Pictures division is responsible for the development, production, marketing and distribution of the Company's annual slate of theatrical films. The Artisan Home Entertainment division has an extensive library of over 7,000 titles which includes its own properties, as well as a wide spectrum of films from Academy Award® winning classics to blockbusters and cult favorites.

About Microsoft

Founded in 1975, Microsoft (Nasdaq "MSFT") is the worldwide leader in software, services and Internet technologies for personal and business computing. The company offers a wide range of products and services designed to empower people through great software — any time, any place and on any device.

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Arts and Sciences.

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For artwork and more information on this release:

http://www.artisanent.com/publicity/

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For Release 12:01 a.m. PST
Feb. 9, 2004

Microsoft and Disney Announce Multiyear Agreement to Cooperate On Digital Media Initiatives and for Disney to License Windows Media Digital Rights Management Software

Joint Agreement Is Aimed at Accelerating Flow of High-Quality, Digital Disney Content to Consumers

REDMOND, Wash., and BURBANK, Calif. — Feb. 9, 2004 — Microsoft Corp. (Nasdaq "MSFT") and The Walt Disney Company (NYSE "DIS") today announced a multiyear agreement to cooperate on several long-term digital media initiatives to improve the quality, security and reach of digital content within the home and on Microsoft® Windows® XP-based PCs as well as on a growing number of home and portable entertainment devices. As part of the agreement, Disney will license Microsoft Windows Media® Digital Rights Management (DRM) technology. Disney and Microsoft have identified three areas of joint focus that utilize effective rights management:

- The creation and secure delivery of compelling high-resolution digital content
- The overall acceleration of digital content flow to consumers — over networks, on optical media and on devices
- Ensuring the seamless flow of secure content between devices, whether in the home or on portable devices

Under the agreement, Disney has licensed Microsoft Windows Media DRM software on a non-exclusive basis to enable the seamless delivery of secured digital media over the next several years.

The agreement signifies Disney's innovative stance and continuing commitment to providing new digital media experiences for consumers, and Microsoft's role as a key technology provider for the entertainment industry.

"Disney is dedicated to providing consumers with entertainment content on various platforms, and this agreement with Microsoft helps facilitate those new business initiatives," said Peter Murphy, senior executive vice president and chief strategic officer for The Walt Disney Company. "The continuing migration of content from analog to digital formats has exciting implications for both consumers and content owners, and we believe this agreement will accelerate this evolution and bring about a vibrant market for legitimate, high-quality entertainment delivered to new categories of end-user devices, such as personal media players and home media center PCs."

"With technologies now available to bring new experiences to consumers, including high-quality digital movies through a range of secure delivery methods, the time is right for a significant cooperative effort such as this one between Microsoft and Disney to help guide the industry," said Will Poole, senior vice president of Windows Client Business at Microsoft. "Our shared goal is to ensure that consumers will have access to great content on many different devices including Windows XP Media Center PCs, high-definition TVs or Portable Media Center devices — without having to worry about compatibility issues. Together we aim to prove that the distribution and consumption of digital media can be done in ways that benefit everyone."

About The Walt Disney Company

The Walt Disney Company is a diversified, international family entertainment and media enterprise with affiliates including Walt Disney Parks and Resorts, The Walt Disney Studios,

ABC Inc., ESPN, Disney Channel, Disney Consumer Products, television and radio stations, and Walt Disney Internet Group.

About Microsoft

Founded in 1975, Microsoft (Nasdaq "MSFT") is the worldwide leader in software, services and Internet technologies for personal and business computing. The company offers a wide range of products and services designed to empower people through great software — any time, any place and on any device.

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For Immediate Release
May 29, 2003

AOL Time Warner and Microsoft Agree to Collaborate on Digital Media Initiatives and Settle Pending Litigation

REDMOND, WASH. and NEW YORK, — May 29, 2003 — Microsoft Corp. (NASDAQ:MSFT) and AOL Time Warner Inc. (NYSE: AOL) today announced an agreement to collaborate on long-term digital media initiatives that will accelerate the adoption of digital content, and to settle the pending litigation between their companies. The two companies have also agreed to a new royalty-free, seven-year license of Microsoft's browsing technology and a variety of steps designed to ensure that their products work better with each other.

Under the digital media agreement, the companies will work together on a series of initiatives to support the more rapid deployment of digital media for consumers and support new business models for content owners through digital rights management technology. The companies aim to help develop a successful digital media environment that is secure from piracy, open to all companies across multiple industries, and offers consumers access to broad content in a compelling manner that is easy to use. As part of this agreement, the two companies have entered into a long-term, non-exclusive license agreement allowing AOL Time Warner to use Microsoft's Windows Media 9 Series and future software for creating, distributing and playing back high-quality digital media.

The legal settlement resolves the private antitrust lawsuit filed against Microsoft in January, 2002 by AOL Time Warner's America Online, Inc. unit on behalf of its subsidiary,

Netscape Communications. As part of the settlement, Microsoft will pay $750 million to AOL Time Warner.

In addition, as part of today's announced settlement, Microsoft has agreed to provide AOL Time Warner's AOL online service with a new distribution channel for its software to certain PC users worldwide. Also, the two companies will cooperate to ensure the best possible AOL member experience on current and future Microsoft operating systems, including commitments by Microsoft for technical cooperation and information disclosures.

"With Microsoft's media technology expertise and AOL Time Warner's content expertise, we believe we can accelerate the adoption of digital media for the Internet and help content providers across the entire industry," said Bill Gates, Microsoft Chairman and Chief Software Architect. "While our companies will continue to compete, I'm pleased that we've been able to resolve our prior dispute and I'm excited about the opportunity to work together collaboratively to make the digital decade a reality."

AOL Time Warner's Chairman and Chief Executive Officer Dick Parsons said: "We welcome the opportunity to build a more productive relationship with Microsoft. Our agreement to work together on digital media initiatives marks an important step forward in better serving consumers and protecting the interests of all content businesses. We look forward to others in the media and entertainment industries joining together with us to help to advance the digital distribution of content to consumers while maintaining copyright protection."

The agreements announced today by the two companies include the following elements:

Digital Media Technology: As part of the companies' agreement on digital rights management, they have established a long-term, non-exclusive license agreement allowing AOL Time Warner to use, if it so chooses, Microsoft's entire Windows Media 9 Series digital media platform, as well as successor Microsoft digital rights management software. This agreement gives AOL Time Warner access to Microsoft's flagship digital media and DRM technologies, which provide an end-to-end solution for high-quality, secure online content distribution. Windows Media

addresses the entire value chain from the original digital encoding of content, through playback by a consumer, and offers options for advanced digital rights management that respects content business rules and security. This agreement will help enable AOL Time Warner to expand its distribution of digital content with confidence as its business needs evolve, making it easy and profitable to provide consumers with convenient access to the vast selection of content that AOL Time Warner distributes.

Digital Media and Digital Rights Management Initiatives: The two companies have agreed to work together and in collaboration with others to develop solutions to issues that have been slowing the movement of high-quality digital content to consumers, including:

- Increasing the available options for consumers legally to obtain high-quality content;
- Technical protection measures emphasizing interoperability and content rule compliance in a mixed analog-digital environment;
- Seeking areas where they can align on public policies and legal actions that will advance the interests of consumers and the relevant industries; and
- Building consumer awareness around intellectual property and the need to respect copyrighted works.

The companies will work to broaden consumer access to high-quality digital content, in such areas as: online music services offering single downloads and/or monthly subscriptions; authorized Internet access to movies; and high-definition video content with more compelling interactive features all on a single optical disc.

Microsoft browsing technology and Windows compatibility with AOL service: Microsoft has provided AOL a royalty-free, seven-year license to use Microsoft's Internet Explorer technologies with the AOL client. To optimize the performance of the AOL service on Microsoft's operating systems, the two companies have made several additional commitments. These include a commitment by Microsoft to make available technical information contained in test or "beta" versions of its Windows operating system to AOL at the same time that Microsoft makes them available to other independent software vendors. Microsoft will also ensure that AOL can participate in other programmatic offerings relating to the development of Microsoft's next-generation "Longhorn" version of Windows on the same terms and at the same time as other independent software vendors.

Support and Coordination: Microsoft will broaden AOL's Product Support and Services contract to provide dedicated support by Microsoft engineers with full access to Windows source code, to help AOL with compatibility and other engineering efforts. Microsoft will make it possible for an AOL development team to work at Microsoft's Redmond, Wash. facilities. The companies will also establish an Executive Council to meet periodically to resolve support and other issues and to promote the long-term development of a constructive relationship between them.

New Distribution Marketing Channel for AOL: Microsoft will provide AOL software discs worldwide to "system builders" – smaller PC manufacturers that obtain their Windows discs from authorized Microsoft distributors.

and services designed to empower people through great software — any time, any place and on any device.

#########

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AOL Time Warner and Microsoft Agree to Collaborate on Digital Media Initiatives and Settle Pending Litigation

REDMOND, WASH. and NEW YORK, -- May 29, 2003 -- Microsoft Corp. (NASDAQ:MSFT) and AOL Time Warner Inc. (NYSE: AOL) today announced an agreement to collaborate on long-term digital media initiatives that will accelerate the adoption of digital content, and to settle the pending litigation between their companies. The two companies have also agreed to a new royalty-free, seven-year license of Microsoft's browsing technology and a variety of steps designed to ensure that their products work better with each other.

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The legal settlement resolves the private antitrust lawsuit filed against Microsoft in January, 2002 by AOL Time Warner's America Online, Inc. unit on behalf of its subsidiary, Netscape Communications. As part of the settlement, Microsoft will pay $750 million to AOL Time Warner.

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Related Links

Transcript:
- Transcript of Press Conference with Richard Parsons and Bill Gates - May 29, 2003

Media Alert:
- AOL Time Warner and Microsoft Hold Press Conference - May 29, 2003

Microsoft Resources:
- Legal News on PressPass
- Windows Media Technologies News on PressPass

benefit of our members worldwide."

"With this agreement we are resolving our disagreements about the past and committing ourselves to a new and constructive relationship for the future," said the two companies' General Counsels, Paul Cappuccio of AOL Time Warner and Brad Smith of Microsoft. "We are committed to a sustained and open dialogue that will forge creative solutions that meet the needs of our companies, our industries, and consumers."

About AOL Time Warner

AOL Time Warner is the world's leading media and entertainment company, whose businesses include interactive services, cable systems, filmed entertainment, television networks, music and publishing.

About Microsoft

Founded in 1975, Microsoft is the worldwide leader in software, services and Internet technologies for personal and business computing. The company offers a wide range of products and services designed to empower people through great software -- any time, any place and on any device.

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Microsoft Announces Windows Media Now Supported By More Than 500 Devices, Up 150 Percent Since 2003 CES

World's Largest Installed Base of Portable Music Players Supporting Music Services Now Exceeds 4 Million; New Windows Media Video Support Comes From Leading DVD Makers and Chip Manufacturers

LAS VEGAS -- Jan. 8, 2004 -- Today at the 2004 International Consumer Electronics Show (CES), Microsoft Corp. announced that support for Windows Media® on consumer electronics devices has grown 150 percent since the 2003 CES, resulting in more than 500 devices that now support Windows Media. These new devices add to the broad choice of devices for consumers supporting Windows Media. Also, new portable music players from leading consumer electronics manufacturers increase the size of the world's largest installed base of secure portable digital music players, bringing the tally to more than 4 million devices supporting Windows Media Audio (WMA) and Windows Media Digital Rights Management. In addition, Apex Digital Inc., KiSS Technology and Malata North America today announced the first DVD players supporting Windows Media Video (WMV) 9, and leading chip manufacturers Sand Video Inc. and Sigma Designs Inc. announced new chips supporting playback of high-definition WMV 9. Together, these new devices and chips help ensure that consumers can enjoy a wide variety of content on their choice of devices throughout the home and on the go.

"The support we have seen for Windows Media Audio and Video 9 Series in the past year has been remarkable," said Dave Fester, general manager of the Windows Digital Media Division at Microsoft. "Our attractive licensing terms and the quality of the audio and video enable consumer electronics manufacturers to easily add Windows Media support and ultimately deliver to consumers the highest-quality audio and video on devices."

"Creative portable audio players support Windows Media because of its quality and file size advantages, enabling our customers to take more high-quality music with them on their favorite Creative devices," said Lisa O'Malley, senior brand manager for portable audio at Creative Labs Inc. "Windows Media powers many of the new music services, providing our customers with the freedom to choose from popular music download services and take their favorite songs on the go."

Windows Media Throughout the Home

Related Links

Microsoft Resources:
- Windows Media Newsroom on PressPass

With the explosion in popularity of digital content, consumers are demanding more ways to enjoy their digital media throughout the home. The following new home theater components support Windows Media and are being announced at 2004 CES:

- **Apex Digital** unveiled its new AD 700 DVD player that supports playback of WMA 9 and WMV 9, one of the first DVD players with this capability. It will be available for purchase in April, 2004. Apex Digital announced support for WMA and HighMAT™ technology in its entire line of DVD players for 2004.
- **KiSS Technology**, a globally leading Scandinavian manufacturer of DVD products, will launch three new products: DVD Player DP-600, DVD Recorder DP-678, and a streaming device, SB-020, with the new decoder chip from Sigma Designs that supports WMV 9 playback. KiSS Technology's booth at CES is South Hall 2, Booth 17731.
- **Malata North America** introduced two models of the DIVA, a new generation of entertainment console featuring the world's first Windows Media-based personal video recorder (PVR). It offers consumers the ability to record television onto a DVD-R or CD-R with up to 15 hours of quality television programming using WMV, or 70 hours of WMA music per DVD-R disc. The DIVA (co-developed with Equator Technologies Inc. and Aeon Digital Corp.) also can serve as a broadband Internet browser able to "stream" Internet-based movies and music like a PC, and supports HighMAT for photos, music and video as well as the ability to play back digital home movies made with Microsoft® Windows® Movie Maker 2 in Windows XP.
- **Matsushita Electric Industrial Co, Ltd. (Panasonic)** unveiled 14 new models of digital audiovisual products supporting WMA and HighMAT. These include the Panasonic DVD-S27, DVD-S47 and DVD-S97 DVD players; DVD-F86 and DVD-F87 five-disc DVD changers; and SC-HT670, SC-HT720, SC-HT820, SC-HT920, SC-PM29 and SC-PM39 DVD/CD home theater systems.
- **Pioneer** unveiled three new home theater products supporting Windows Media. The VSX-59TXi is a new top-of-the-line AV amplifier model that supports WMA 9 Professional for the delivery of multichannel surround sound. The new amplifier model also uses Pioneer's Advanced Multichannel Acoustic Calibration system, which allows sound adjustments at the same professional level as the monitoring methods of recording studios. Also unveiled were the DVR-310 DVD Recorder and the DV-275 DVD, both of which support playback of WMA.
- **Shanghai Media Group,** the second-largest broadcaster in China, announced a new mobile TV set supporting WMA 9 and WMV 9 for use with its digital video broadcast system. The model number is MHD301R-9.

Also, Microsoft announced industry support for its new technology, Windows Media Connect, which will help pave the way for accessing music, video and photos from the PC on consumer electronics devices throughout the home. In addition, Microsoft announced the Windows Media Center Extender Technology and Xbox® Media Center Extender

PMRights	Specifies and retrieves the rights that govern content use with a portable license.

(2) Company will not use the WMRM SDK or any component thereof to develop or aid in the development of Licensed Server Applications to archive, copy, or save to non-volatile storage, Protected ASF Content unless the DRM Flags specifically permit such actions. Nothing in this Agreement shall be deemed to authorize Company to infringe the copyright or other intellectual property rights of the owners of ASF Content.

(3) To the extent that any Protected ASF Content is identified by a DRM Flag as compliant with or validated for the Secure Digital Music Initiative ("SDMI") as the rules of such compliance may be developed during the Term, Company will follow such SDMI rules in any use of DRM in its Licensed Server Application(s). To the extent that SDMI rules conflict with the rules and capabilities of the WMRM SDK, the WMRM SDK rules will take precedence. If the conflict is resolved by an Update, Company will take commercially reasonable efforts to update the Licensed Server Application(s) to comply within ninety (90) days. Any SDMI watermark requirements are Company and its Affiliate's sole responsibility.

(4) Regardless of any express right set forth in this Exhibit, each Licensed Server Application will not (i) edit Protected ASF Content that Company does not own or have the rights to so modify, or (ii) modify ASF Content in a manner that violates the DRM Flags in any DRM license associated with the ASF Content.

(5) To promote interoperability with legacy and future solutions built on Windows Media technologies, Microsoft recommends that a Licensed Server Application that creates ASF files, or registers for any file types or MIME types associated with ASF files adheres to the ASF File naming and registration conventions posted at <<http://go.microsoft.com/fwlink/?LinkId=11652>>.

EXHIBIT B
SECURITY FIX SEVERITY SCHEDULE

Severity	Criteria	Time Limit
Class 1	Revocation Lists for security breaks	3 days
Class 2	Updates for software binary components replacing certain or all Microsoft provided .dlls in all Licensed Server Applications.	14 days
Class 3	Modification by Company to all Licensed Server Applications to implement updates to functionality for security fixes provided by Microsoft.	30 days

EXHIBIT C
FORM OF AMENDMENT TO THE
MICROSOFT WINDOWS MEDIA RIGHTS MANAGER
SOFTWARE DEVELOPMENT KIT 9 SERIES LICENSE AGREEMENT

This Amendment No. __ ("Amendment") to the parties' Microsoft Windows Media Rights Manager Software Development Kit 9 Series License Agreement dated _____ (the "Original Agreement"), is entered into and effective as of the later of the two signature dates below, by and between Microsoft Corporation, a Washington corporation with a principal place of business at One Microsoft Way, Redmond, WA 98052, ("Microsoft") and _____ (the entity identified as "Company" in the Original Agreement) located at _____.

WHEREAS, the parties have entered into the Original Agreement; and

WHEREAS, the parties desire to amend and restate certain provisions of the Original Agreement as set forth herein.

NOW, THEREFORE, in consideration of the mutual promises contained herein and for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereby agree as follows:

1. Defined terms not otherwise defined herein shall be defined according to the Original Agreement.

2. The Table on the first page of the Original Agreement is hereby amended to add the following:

	Product Name	**Version**	**Description**
"Licensed Server Application(s)"			

CONFIDENTIAL
LCA

3. Company agrees that each Licensed Server Application listed on this Amendment shall be bound by all of the terms and conditions of the Original Agreement and that the addition of Licensed Server Application(s) hereunder shall not extend the Term of the Original Agreement.

4. This Amendment may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original, and all of which taken together shall constitute one and the same Amendment. Delivery of an executed counterpart of this Amendment by facsimile transmission shall be effective as delivery of an originally executed counterpart of this Amendment. This Amendment does not constitute an offer by Microsoft and shall only be effective upon execution of this Amendment by the parties' duly authorized representatives.

5. The Original Agreement, as amended by this Amendment, is and shall continue to be in full force and effect and is hereby ratified and confirmed in all respects. Except to the extent specifically set forth herein, nothing contained in this Amendment shall constitute a waiver of any conditions or any other terms, provisions or requirements of the Original Agreement or any other agreements between the parties.

IN WITNESS WHEREOF, Microsoft and Company have caused this Amendment to be executed by duly authorized representatives as of the later of the two signature dates below.

MICROSOFT CORPORATION	**COMPANY**
Signature:	Signature:
Name (print):	Name (print):
Title:	Title:
Date:	Date:

DRM CLIENT CERTIFICATE ADDENDUM TO
END USER LICENSE AGREEMENT FOR
MICROSOFT WINDOWS MEDIA FORMAT SOFTWARE DEVELOPMENT KIT 9 SERIES
("the Addendum")

This DRM Client Certificate Addendum to the parties' End User License Agreement for the Microsoft Windows Media Format Software Development Kit 9 Series ("WMF SDK EULA") is made and entered into by and between MICROSOFT CORPORATION ("Microsoft") and the corporation, sole proprietorship, educational institution, non-profit or other entity indicated in the table below ("Company" and/or "You(r)") as of the later of the two signature dates below (the "Effective Date").

"Company"	**Company Name:**	
	Place of Incorporation: *(if incorporated)*	
	Mailing Address:	
"Company Contact"	**Contact Name:**	
	Title:	
	Phone:	
	Fax:	
	Email:	

Note: DRM Client Certificates will only be distributed to the Company Contact.

	Product Name	**Version**	**Description**
"Licensed Application(s)"			

Recitals

Whereas, Company has accepted, or by installation of the Windows Media Format Software Development Kit 9 Series will accept, the WMF SDK EULA; and

Whereas, Microsoft is providing one or more DRM Client Certificates (as defined below) to Company as part of the Software Product and is updating certain terms and conditions of the WMF SDK EULA; and

Whereas, the WMF SDK EULA as modified by this Addendum is referred to as the "Agreement"; and

Whereas, Company desires to enter into the Agreement for purposes of obtaining one or more DRM Client Certificates to develop, test, and distribute Licensed Applications (as defined below); and

Whereas, the parties desire to amend certain provisions of the WMF SDK EULA as set forth herein.

Now, therefore, in consideration of the mutual promises contained herein and for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereby agree as follows:

Amendment

1. To the extent that Company has previously entered into the WMF SDK EULA, Company confirms its acceptance of, and willingness to be bound by, all of the terms and conditions of the WMF SDK EULA. If Company has not previously entered into the WMF SDK EULA, Company hereby accepts and agrees to be bound by all of the terms and conditions of the WMF SDK EULA. Initially capitalized terms, not otherwise defined herein, have the same meaning as set forth in the WMF SDK EULA.

2. The following new definitions are added:

   "Company Contact" means the person identified in the table above responsible for requesting and receiving DRM Client Certificates as specified in Section 5 of the Addendum.

   "Confidential Information" means: (i) a DRM Client Certificate when not statically linked as part of a Application, as more fully specified herein and (ii) any trade secrets and/or other proprietary non-public information not generally known relating to Microsoft's product plans, designs, costs, prices and product names, software, finances, marketing plans, technical support requests, business opportunities, research, development or know-how. Notwithstanding the foregoing, "Confidential Information" does not include information that: (A) is or becomes generally known or available by publication, commercial use or otherwise through no fault of Company; (B) is generally known and has been reduced to tangible form by Company; prior to the time of disclosure and is not subject to restriction; (C) is independently developed by Company; without the use of other Confidential Information; (D) is lawfully obtained from a third party that has the right to make such disclosure; (E) is made generally available by Microsoft without restriction on disclosure; or (F) is released in writing by Microsoft for publication by Company.

   "DRM" means Microsoft's digital rights management system that enables enforcement of business rules and license-based access to ASF Content, consistent with the terms and conditions of this Agreement.

   "DRM Client Certificate" means a Microsoft-provided software component, unique to Company and unique to each version of each Licensed Application, that enables, in accordance with Section 3 of this Addendum, an Application to use the portions of Software Product that manipulate ASF Content protected by DRM. DRM Client Certificates are part of the Software Product and subject to all of the terms and conditions of the WMF SDK EULA in addition to those terms in this Addendum specifically applicable to DRM Client Certificates.

   "DRM Flag(s)" means the flag(s) describing license condition(s) for, and set by the creator or authorized licensor of, Protected ASF Content as more fully described in Exhibit A.

   "Export" means to save to permanent storage, pass to a plug-in interface, transfer to another process, write to a network, or otherwise export Content.

   "Licensed Applications" means Company's Applications listed in the table above that (i) run in conjunction with the Software Product; (ii) use the DRM Client Certificates licensed under this Agreement to manipulate Protected ASF Content; and (iii) are not designed for or intended to be used as a replacement of the Software Product for use by third parties to develop other software products or programs (e.g., software development tools). Additional Licensed Applications, and

new versions of existing Licensed Applications, may be included by mutual agreement of the parties through use of the form of amendment attached hereto as Exhibit C ("Amendment").

"Logo Guidelines" means the Windows Media logo program guidelines posted on http://www.microsoft.com/windows/windowsmedia/create/logo.asp or its successor site

"Protected ASF Content" means ASF Content that has been protected by DRM.

"Security Upgrade" means invoking the individualization functionality contained in the Software Product to upgrade the DRM security components installed on an end user's computer.

"Term" means the period extending one (1) year from the Effective Date.

3. Any DRM Client Certificates provided by Microsoft to Company under this Agreement are Redistributable Components of the Software Product. With respect to DRM Client Certificates, Company may exercise all of the rights set forth in this Agreement applicable to Redistributable Components of the Software Product so long as Company complies with the following additional license restrictions and requirements:

   (a) *DRM Requirements.* Licensed Applications must comply with the DRM requirements set forth in Exhibit A to this Addendum as such Exhibit may be updated by Microsoft periodically during the Term. In addition, Licensed Applications may not (i) circumvent or compromise DRM protection of ASF Content (e.g. by exposing exploitable mechanisms such as debugging information), or (ii) Export Protected ASF Content in an unprotected form unless the DRM Flags explicitly allow it.

   (b) *Use of DRM Client Certificates.* Licensed Applications must comply with the DRM Client Certificate requirements set forth in Exhibit B to this Addendum as such Exhibit may be updated by Microsoft periodically during the Term. Microsoft may exercise its right to revoke, or instruct its licensees or agents to revoke on Microsoft's behalf, any DRM Client Certificate pursuant to paragraph 3 of Exhibit B upon two (2) days written notice to Company.

   (c) *End-user License Agreements.* When Company distributes Licensed Applications, Company must do so under an end-user license agreement consistent with, and no less protective of Microsoft's rights than, this Agreement. Company also must incorporate and prominently display the following provisions (or substantially similar ones) in its end-user license agreements for Licensed Applications: "Content providers are using the Microsoft digital rights management technology for Windows Media distributed with this software ("WM-DRM") to protect the integrity of their content ("Secure Content") so that their intellectual property, including copyright, in such content is not misappropriated. Portions of this software and other 3rd party applications use WM-DRM to play Secure Content ("WM-DRM Software"). If the WM-DRM Software's security has been compromised, owners of Secure Content ("Secure Content Owners") may request that Microsoft revoke the WM-DRM Software's right to copy, display and/or play Secure Content. Revocation does not alter the WM-DRM Software's ability to play unprotected content. A list of revoked WM-DRM Software is sent to your computer whenever you download a license for Secure Content from the Internet. Microsoft may, in conjunction with such license, also download revocation lists onto your computer on behalf of Secure Content Owners. Secure Content Owners may also require you to upgrade some of the WM-DRM components distributed with this software ("WM-DRM Upgrades") before accessing their content. When you attempt to play such content, WM-DRM Software built by Microsoft will notify you that a WM-DRM Upgrade is required and then ask for your consent before the WM-DRM Upgrade is downloaded. Non-Microsoft WM-DRM Software may do the same. If you decline the upgrade, you will not be able to access content that requires the WM-DRM Upgrade; however, you will still be able to access unprotected content and Secure Content that does not require the upgrade. WM-DRM features that access the Internet, such as acquiring new licenses and/or performing a required WM-DRM Upgrade, can be switched

off. When these features are switched off, you will still be able to play Secure Content if you have a valid license for such content already stored on your computer."

(d) *Branding.* In accordance with the Logo Guidelines, Company will (i) select the appropriate Windows Media logo for the Company's Licensed Applications ("Logo"), (ii) execute a Windows Media logo license ("Logo License") for the Logo, and (iii) display the Logo in conjunction with Company's Licensed Applications pursuant to the terms of Logo License and Logo Guidelines.

(e) *Contact Information.* In the event that the Company elects to change any Company Contact information during the Term, Company must promptly notify Microsoft of the new contact information by sending email to WMLA@microsoft.com or as otherwise directed in writing by Microsoft.

4. Company will protect the Confidential Information from unauthorized dissemination and use with the same degree of care that Company uses to protect its own like information. Company will not use the Confidential Information other than as permitted by this Agreement. Company will not disclose to third parties the Confidential Information without the prior written consent of Microsoft, or as authorized by this Agreement. Except as expressly provided in this Agreement, no ownership or license rights is granted in any Confidential Information. This Agreement does not act as a general or master confidentiality agreement between the parties.

5. As of the Effective Date, DRM Client Certificates will be delivered to Company Contact as Company may reasonably request such additional DRM Client Certificates from time to time for use by its new Licensed Applications, subject to Company's compliance with the terms and conditions of this Agreement and Microsoft's policies for issuing DRM Client Certificates and/or issuing multiple DRM Client Certificates. Company must implement and use a unique DRM Client Certificate is required for each version of each Licensed Application.

6. The parties shall cooperate with each other on press releases and similar communications regarding the non-confidential subject matter of this Agreement. The content, timing and necessity of such press releases or similar public communications must be agreed upon in writing by both parties. Notwithstanding the foregoing, Company consents to Microsoft's listing Company as a licensee of the Software at an appropriate Microsoft web page, as well as in marketing materials generated by or for Microsoft.

7. Company shall, at its expense and Microsoft's request, defend any claim or action brought by a third party against Microsoft, or Microsoft's Affiliates, directors, or officers, arising out of or related to the Licensed Application excluding any claim or action to the extent arising from Company's exercise of its license rights under the terms of this Agreement ("Company Claims"), and Company will indemnify and hold Microsoft harmless from and against any costs, damages and fees reasonably incurred by Microsoft, including but not limited to fees of outside attorneys and other professionals, that are attributable to such Company Claims. Microsoft shall: (a) provide Company reasonably prompt notice in writing of any such Company Claims and permit Company, through counsel chosen by Company and reasonably acceptable to Microsoft, to answer and defend such Company Claims; and (b) provide the entity defending such claim information, assistance and authority, at such entity's expense, to help defend such Company Claims. Company will not be responsible for any settlement made by Microsoft without Company's written permission, which permission will not be unreasonably withheld or delayed. Company shall not settle any Company Claim under this Section 7 on Microsoft's behalf without first obtaining Microsoft's written permission, which permission will not be unreasonably withheld or delayed. In the event Company and Microsoft agree to settle a Company Claim, Company agrees not to disclose terms of the settlement without first obtaining Microsoft's written permission, which will not be unreasonably withheld or delayed.

8. Either party may suspend performance and/or terminate this Agreement immediately upon written notice at any time if:

   (a) The other party is in material breach of any material warranty, term, condition or covenant of this Agreement, other than those contained in Section 4, Section 3(b), and Exhibit B of the Addendum, and fails to cure that breach within fifteen (15) days after written notice thereof; or

   (b) The other party is in material breach of Section 4 of the Addendum.

   In addition, if Company is in material breach of Section 3(b) and/or Exhibit B of the Addendum and fails to cure, or to takes steps which are satisfactory to Microsoft in Microsoft's sole discretion to cure, that breach within two (2) business days after written notice from Microsoft, Microsoft may suspend performance and/or terminate this Agreement immediately upon written notice at any time. Notwithstanding the foregoing, Microsoft and Company may mutually agree in writing to extend such cure period.

9. Upon any termination of this Agreement or expiration of the Term, Company will receive no further Updates to the Software Product and will not be issued any further DRM Client Certificates. In the event of termination or expiration of this Agreement for any reason, in addition to the sections listed in the WMF SDK EULA, sections 1, 2, and 4 of this Addendum will survive. Neither party will be liable to the other for damages of any sort resulting solely from terminating this Agreement in accordance with its terms.

   Unless this Agreement is terminated by Microsoft pursuant to Section 8 for Company's material breach of Sections 1, 2 and/or 3 of the WMF SDK EULA and/or Sections 3 and/or 4 of the Addendum ("Critical Provisions"), Company's Distribution rights for then-current Licensed Applications under Sections 2 of the WMF SDK EULA (solely with respect to the then-current versions of the Redistributable Components and Sample Source as may have been delivered by Microsoft to Company) survive the expiration of the Term or any such termination of this Agreement, subject to Company's ongoing compliance with the obligations under Section 3 of the Addendum and Section 3 of WMF SDK EULA. Following the expiration of the Term, Company's continuing Distribution rights authorized under the foregoing sentence automatically terminate should Company breach any of the Critical Provisions.

   If this Agreement is terminated for Company's material breach of any Critical Provisions, then upon the effective date of termination (i) all of Company's rights under this Agreement immediately terminate, and (ii) Company shall immediately return or, at Microsoft's option, destroy all Microsoft Confidential Information. Any distribution prior to the effective date of termination by Company to end-users of Licensed Applications including Redistributable Components or Sample Source in object code form which have been already validly granted under an end-user license agreement in compliance with this Agreement shall, subject to applicable restrictions under Section 3 of the Addendum and Section 3 of WMF SDK EULA, not be affected and shall remain in full force and effect. No other rights of Company shall survive termination for Company's material breach of any Critical Provisions.

10. All notices and requests in connection with this Agreement shall be deemed given on the day they are received either by messenger, delivery service, or in the United States of America mails, postage prepaid, certified or registered, return receipt requested, and addressed as follows:

    NOTICES TO COMPANY:

    See Company Contact information on the first page of this Addendum.

NOTICES TO MICROSOFT:

MICROSOFT CORPORATION
One Microsoft Way
Redmond, WA 98052-6399
Phone: (425) 882-8080
Fax: (425) 706-7329

Attn: Digital Media Division Licensing

Copy to: Law & Corporate Affairs, US Legal

MICROSOFT CORPORATION
One Microsoft Way
Redmond, WA 98052-6399
Fax: (425) 706-7409

or to such other address as the party to receive the notice or request so designates by written notice to the other.

11. This Addendum amends, modifies, and supersedes to the extent of any inconsistencies, the provisions of the WMF SDK EULA. Except as expressly amended by this Addendum, the WMF SDK EULA shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Addendum as of the Effective Date. This Addendum does not constitute an offer by Microsoft. This Addendum shall be effective upon execution on behalf of Company and Microsoft by their duly authorized representatives.

MICROSOFT CORPORATION	**COMPANY**
By:	By:
Name (print):	Name (print):
Title:	Title:
Date:	Date:

EXHIBIT A

DRM LICENSE FORMAT REQUIREMENTS

(1) For the purposes of this exhibit, "Material Security Problem" means a security breach in DRM, or a security breach attributable to Company or to any Licensed Application that is made available in contravention of Sections 3(b) and/or 3(d) of this Addendum, or which otherwise defeats in any way the protective settings in the DRM Flags in licenses for ASF Content.

(2) If a Licensed Application reads or writes Protected ASF Content, it will adhere to rights provided by the associated DRM license. Below is a table for DRM version 1 listing the available rights, their definition, and the binary bit-placement of each and a table for DRM version 7 listing the XML-based rights and descriptions.

Bit-based rights for DRM version 1

Bit	Right	Settings	
0x1	Play on PC	1	Allow playback on PC.
		0	Do not allow playback on PC.
0x2	Transfer to a portable device that is not SDMI compliant	1	Allow transfer to a portable device that is not SDMI compliant.
		0	Do not allow transfer to a portable device that is not SDMI compliant.
0x4	Recover the license	1	Do not allow the license to be restored to the consumer by Windows Media License Service.
		0	Allow license recovery.
0x8	Burn to CD	1	Allow burning to a CD in the RedBook Audio format.
		0	Do not allow burning to a CD in the RedBook Audio format.
0x10	Mark as SDMI validated	1	Mark content as SDMI validated. The media file can be played on any SDMI-compliant playback device.
		0	Do not mark content as SDMI validated.
0x20	Limit to one-time use	1	Delete license after it is used one time.
		0	Do not restrict license to one-time use.
0x40	Save streams to disk	1	Allow streamed content to be saved to a disk.
		0	Do not allow streamed content to be saved.
0x10000	SDMI upgrade trigger	1	Content requires a player upgrade.
		0	Content does not require a player upgrade.
0x20000	SDMI no more copies	1	Disallow transfer of content to another device
		0	Allow transfer of content to another device

XML-based rights for DRM version 7

Property	Description
AllowBackupRestore	Specifies and retrieves a Boolean value that indicates whether the license permits backup and restoration.
AllowBurnToCD	Specifies and retrieves a Boolean value that indicates whether the license permits content to be copied to a CD in the RedBook Audio format.
AllowPlayOnPC	Specifies and retrieves a Boolean value that indicates whether the license permits content to be played on a client computer.
AllowTransferToNonSDMI	Specifies and retrieves a Boolean value that indicates whether the license permits content to be transferred to non-SDMI-compliant portable devices or portable media.
AllowTransferToSDMI	Specifies and retrieves a Boolean value that indicates whether the license permits content to be transferred to SDMI-compliant portable devices or portable media.
BeginDate	Specifies and retrieves the date before which the license is not valid.
BurnToCDCount	Specifies and retrieves the number of times that content can be copied to a CD.
DeleteOnClockRollback	Specifies and retrieves a Boolean value that indicates whether a license must be deleted if the clock is set to an earlier time.
DisableOnClockRollback	Specifies and retrieves a Boolean value that indicates whether a license must be disabled if the clock is set to an earlier time.
ExpirationDate	Specifies and retrieves the date after which the license is no longer valid.
MinimumAppSecurity	Specifies and retrieves the minimum security level that a player must have to manipulate the content.
Playcount	Specifies and retrieves the number of times the license permits content to be played.
PMAppSecurity	Specifies and retrieves the security level for content that is being transferred to portable devices or portable media.
PMExpirationDate	Specifies and retrieves the expiration date for a media license.
PMRights	Specifies and retrieves the rights that govern content use with a portable license.
TransferCount	Specifies and retrieves the number of times the content can be transferred to portable devices or portable media.

The Licensed Application will check the rights available for the issued license and enable/disable functionality based on the tables above. The Licensed Application will provide no means (including

but not limited to programming APIs, end-user selectable options, or purposeful or accidental placement of debugging information in the Licensed Application) for the enablement or disablement of the intended DRM functionality.

Any Licensed Applications that write ASF Content will not set any DRM Flags other than 0x1, 0x2, 0x4, 0x8, 0x10, 0x20, 0x40, 0x10000, 0x20000.

Failure of a Licensed Application, as distributed by Company, to abide by the rights issued in the ASF Content license constitutes a material breach of this Agreement.

(3) When transferring Protected ASF Content to an MP3 Device or other, similar digital device, each Licensed Application will check and comply with the security level and DRM Flags in the license associated with that ASF Content, including any associated license conditions set in such DRM Flags. Further, Licensed Applications will not use, incorporate or call or enable any other software that modifies the behavior of the Licensed Application in a manner which causes it to violate the conditions of this Exhibit.

(4) Microsoft may, during the Term, enhance the DRM features of the Software Product, including the Redistributable Components, to eliminate potential security breaches and/or enhance DRM features (including ease of use) with respect to Protected ASF Content. Company acknowledges that Microsoft will provide those users who are ASF Content providers of various Windows Media rights management applications with the ability to set the minimum revision level (or minimum security level) for compatibility of Protected ASF Content, and that Licensed Applications created using older versions of the Software Product and/or Redistributable Components may not be fully compatible with such future ASF Content. Microsoft will use commercially reasonable efforts to: (i) provide Company with Updates to DRM that correct security breaches, though such Updates may require Company to agree to additional or alternative terms and conditions than that set forth in this Agreement; and (ii) notify Company of any actual security breaches in DRM which in Microsoft's sole and reasonable judgment would affect the Licensed Application.

(5) Notwithstanding Section 4(e) of the WMF SDK EULA, if Microsoft provides Company with Updates to the Software Product which correct actual or potential security breaches, Company will use commercially reasonable efforts to incorporate and/or make available to users of the Licensed Applications, through reasonable means (such as availability on a Company web site), such Updates of the Software Product as part of and/or as Updates to such Licensed Applications. Company shall have a commercially reasonable period of time (not to exceed thirty (30) days from the date Company received such Updates) to incorporate and/or make available such Updates.

(6) To enable the DRM feature (including but not limited to playback/decode, transfer, and/or encoding/encryption) of the Redistributable Components for Company's Licensed Applications, Company must use the DRM Client Certificate. Company must use the DRM Client Certificate in accordance with the DRM Client Certificate requirements of Exhibit B as such requirements may be updated periodically by Microsoft during the Term.

(7) Company may not use the Software Product or any component thereof to develop or aid in the development of Licensed Applications to archive, copy, or save to non-volatile storage, Protected ASF Content unless the DRM Flags specifically permit such actions. Nothing in this Agreement shall be deemed to authorize Company to infringe the copyright or other intellectual property rights of the owners of ASF Content.

(8) To the extent that any Protected ASF Content is identified by a DRM Flag as compliant with or validated for the Secure Digital Music Initiative ("SDMI") as the rules of such compliance may be developed during the Term, Company will follow such SDMI rules in any use of DRM in its Licensed Applications. To the extent that SDMI rules conflict with the rules and capabilities of the current Software Product, the Software Product rules will take precedence. If the conflict is resolved by an Update, Company will take commercially reasonable efforts to update the Licensed Applications to comply within ninety (90) days. Any SDMI watermark requirements are Company and its Affiliate's sole responsibility.

(9) Notwithstanding any provision of this Agreement, if Company intentionally or negligently fails to correct any Material Security Problem(s) and Microsoft has provided Company with two (2) business days notice of such Material Security Problem and has delivered any appropriate DRM Updates to Company with respect to such security problems as of such notice, then Microsoft or its authorized licensee or agent may, upon written notice at any time, revoke any associated DRM Client Certificate with respect to the particular Licensed Application with a Material Security Problem.

(10) Regardless of any express right set forth in this Exhibit, Licensed Applications will not (i) edit Protected ASF Content that Company does not own or have the rights to so modify, or (ii) modify ASF Content in a manner that violates the DRM Flags in any DRM license associated with the ASF Content.

(11) Licensed Applications supporting license acquisition functionality in the Software Product must initiate a Security Upgrade (A) during setup, (B) by end-user invocation, or (C) when Protected ASF Content that requires individualization is opened (e.g. when Licensed Applications receive a WMT_NEEDS_INDIVIDUALIZATION status message). When initiating a Security Upgrade, Microsoft recommends Licensed Applications adhere to the user interface conventions for DRM Security Upgrades posted on http://go.microsoft.com/fwlink/?LinkId=9265 in the section labeled "Privacy and the Windows Media Format SDK". Licensed Applications must first receive an end user's explicit informed consent before performing a Security Upgrade on the end user's computer.

EXHIBIT B

DRM CLIENT CERTIFICATE REQUIREMENTS

(1) Each Licensed Application will:

(i) Statically link to the DRM Client Certificate provided by Microsoft; and

(ii) Use the DRM Client Certificates or any one of them solely to enable the Licensed Application to interoperate with the other Redistributable Components.

(2) The DRM Client Certificate(s) are Microsoft Confidential Information. Company will not (i) share or disclose DRM Client Certificates or other Confidential Information received from Microsoft pursuant to the certification process with any third party other than an Independent Contractor working pursuant to this Agreement and on a need-to-know basis, or (ii) use such Confidential Information for any purpose not permitted by this Agreement.

(3) *Revocation of DRM Client Certificates.*

(i) Microsoft retains the right to revoke, or to instruct its licensees or agents to revoke on Microsoft's behalf, upon two (2) days written notice to Company, any Licensed Application DRM Client Certificate if security of such DRM Client Certificate has been publicly or generally compromised such that neither Microsoft nor Company can reasonably remedy the security breach.

(ii) Revocation may occur through a technical lockout implemented unilaterally by Microsoft, or contractually by a notice from Microsoft to Company. To implement a technical lockout Microsoft may deliver Licensed Application Certification revocation notices to Licensee Application users or their computers by any methods deemed reasonable by Microsoft. Such methods may include notifying DRM license servers of the Licensed Application DRM Client Certificate revocation which will in turn (A) pass notice of the revocation to users' machines containing the Licensed Application installed when such machines acquire Content licenses from DRM license servers and (B) automatically update the Licensed Application. Company understands that revocation of a DRM Client Certificate by technical means will disable a Licensed Application's ability to play or otherwise manipulate some or all ASF Content. If Microsoft revokes a DRM Client Certificate by contractual notice, Company must immediately recall, update or otherwise ensure that affected Licensed Applications cannot play or otherwise manipulate ASF Content.

(iii) Unless the compromise of a DRM Client Certificate or Licensed Application resulted from Company's breach of this Agreement, Microsoft will work with Company to issue a new DRM Client Certificate for the affected Licensed Application. With respect to a Licensed Application with a compromised DRM Client Certificate, Microsoft may, in its sole discretion, issue a new DRM Client Certificate for such Licensed Application.

(iv) If the Licensed Application receives the NS_E_DRM_APPCERT_REVOKED or NS_E_DRM_LICENSE_APP_NOTALLOWED error from the Redistributable Component, the Licensed Application will either (A) invoke an internal upgrade mechanism to restore the security of the Licensed Application, or (B) transfer the user to a Company Web site page which explains the security compromise and how to restore the security and reinstate complete playback functionality of the compromised Licensed Application.

(4) Each Licensed Application and any Updates thereof released during the Term shall incorporate a unique and different DRM Client Certificate. Company may obtain additional DRM Client Certificates upon request in accordance with Section 5 of this Addendum.

EXHIBIT C

FORM OF AMENDMENT TO THE
DRM CLIENT CERTIFICATE ADDENDUM TO
END USER LICENSE AGREEMENT FOR
MICROSOFT WINDOWS MEDIA FORMAT SOFTWARE DEVELOPMENT KIT 9 SERIES

This Amendment No. __ ("Amendment") to the parties' DRM Client Certificate Addendum to End User License Agreement for Microsoft Windows Media Format Software Development Kit 9 Series dated _____ ("Original Agreement"), is entered into and effective as of the later of the two signature dates below, by and between Microsoft Corporation, a Washington corporation with a principal place of business at One Microsoft Way, Redmond, WA 98052, ("Microsoft") and _____(the entity identified as "Company" in the Original Agreement) located at _____.

WHEREAS, the parties have entered into the Original Agreement; and

WHEREAS, the parties desire to amend the Original Agreement in order to add additional Licensed Applications.

NOW, THEREFORE, in consideration of the mutual promises contained herein and for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereby agree as follows:

1. Defined terms not otherwise defined herein are defined according to the Original Agreement.

2. The table on the first page of the Original Agreement is hereby amended to add the following:

	Product Name	Version	Description
"Licensed Application(s)"			

3. Company agrees that each Licensed Application listed on this Amendment is subject to all of the terms and conditions of the Original Agreement and that the addition of Licensed Application(s) hereunder does not extend the Term of the Original Agreement.

4. This Amendment may be executed in any number of counterparts, each of which when so executed is deemed to be an original, and all of which taken together constitutes one and the same Amendment. Delivery of an executed counterpart of this Amendment by facsimile transmission is effective as delivery of an originally executed counterpart of this Amendment. This Amendment does not constitute an offer by Microsoft and is only be effective upon execution of this Amendment by the parties' duly authorized representatives.

5. The Original Agreement, as amended by this Amendment, is and will continue to in full force and effect and is hereby ratified and confirmed in all respects. Nothing contained in this Amendment constitutes a waiver of any conditions or any other terms, provisions or requirements of the Original Agreement or any other agreements between the parties.

IN WITNESS WHEREOF, Microsoft and Company have caused this Amendment to be executed by duly authorized representatives as of the later of the two signature dates below.

MICROSOFT CORPORATION	**COMPANY**
Signature:	Signature:
Name (print):	Name (print):
Title:	Title:
Date:	Date:

Amendment Number:	<<TAG: AmendmentNumber>>
Amendment Date:	<<TAG: AmendmentEffectiveDate>>
COMPANY Name:	<<TAG: COMPANY NAME>>
MS Agreement Number:	<<TAG: AgrNum>>
Agreement Effective Date:	<<TAG: EffDate>>

AMENDMENT TO THE
MICROSOFT OEM EMBEDDED TOOLKIT LICENSE AGREEMENT

Effective as of the Amendment Date indicated above, the below signed parties agree that the indicated portions of the above referenced License Agreement (hereinafter the "License Agreement") are hereby amended by this instrument (hereinafter the "Amendment"), as follows:

A. The attached Product and Royalty Schedule is hereby added to the License Agreement.

B. For purposes of this Amendment, the terms of this Amendment (including any definitions herein) shall supersede any inconsistent terms (and definitions) contained in the Microsoft OEM Business Terms Document for Embedded Systems between the parties, the License Agreement and/or any previous amendment(s).

IN WITNESS WHEREOF, the parties have executed this Amendment in duplicate as of the date first written above. All signed copies of this Amendment shall be deemed originals. This Amendment is executed only in the English language.

MICROSOFT LICENSING, GP
A general partnership organized under the laws of:
State of Nevada, U.S.A.

_____
By (Signature)

_____
Name (Printed)

_____
Job Title

_____
Date

COMPANY
A company organized under the laws of:

_____
By (Signature)

_____
Name (Printed)

_____
Job Title

_____
Date

PRODUCT AND ROYALTY SCHEDULE

Microsoft Windows Media DRM 7.1 for Microsoft Windows CE .NET 4.2 Operating System For Embedded Systems

Product Number	Product Name and Version	Language Version(s)	Royalty US$ *	Additional Provisions
P21-00001	Microsoft® Windows Media® DRM 7.1 for Windows® CE .NET 4.2	Non-Specific	$0	1-11

*A Product is not licensed hereunder unless royalty rate(s) are indicated in the Product table and the Product is licensed for one or more Embedded System(s) described in the "Embedded Systems Table" section of this Product and Royalty Schedule.

Additional Provisions

The following provisions ("Additional Provisions") apply to the Licensed Product(s) as indicated above and are in addition to the General Terms and Conditions of this License Agreement. Capitalized terms used below and not otherwise defined have the meaning set forth in the General Terms and Conditions.

1. Definitions. As used in these Additional Provisions:

(a) "Advanced Systems Format" or "ASF" means the current version of the extensible file storage format developed by or for MSCORP for authoring, editing, archiving, distributing, streaming, playing, referencing, or otherwise manipulating Content, as used by the Windows Media technologies.

(b) "ASF Content" means Content contained within ASF and optionally protected with DRM.

(c) "Closed System" means an Embedded System which limits the software that can be loaded and executed by the end user by requiring that such software be either (i) digitally signed and encrypted software from COMPANY, or (ii) applications which can only be executed as Sandboxed Applications.

(d) "COMPANY Contact" means the person identified in the table in Additional Provision 3 responsible for coordinating the licensing steps required to obtain the Licensed Product and for requesting and receiving DRM Certificate(s) as specified in Additional Provision 4. The Company Contact should contact Windows Media Licensing Administration (at wmla@microsoft.com) for detailed instructions.

(e) "Content" means digital audio (including, but not limited to, timeline-synchronized audio, music, ring tones, voice, or sounds), digital video, and other digital information including data, text (including, but not limited to, script command data and related metadata such as a song title or an artist's name), animation, graphics, photographs, artwork, and combinations of any or all of the foregoing.

(f) "Convert" means to remove the DRM protection from a Content file in ASF for any purpose not explicitly authorized by the DRM Flags of the license for that Content, including but not limited to writing that unprotected DRM Content to disk or to a network.

(g) "DRM" means the Licensed Product's digital rights management system that enables enforcement of business rules and license-based restrictions for Content.

(h) "DRM Certificate" means an MS provided, unique-to-COMPANY software component(s), that enables, in accordance with Additional Provision 6, a Embedded System to use the portions of Licensed Product that manipulate ASF Content protected by DRM. Any DRM Certificate(s) provided by MS to COMPANY hereunder will be considered part of the Licensed Product.

(i) "DRM Client Component" means the DRM component of the Licensed Product that, together with the DRM Certificate, enables an Embedded System to playback ASF Content protected with DRM in accordance with the requirements of Additional Provision 6.

(j) "DRM Flag(s)" means the flag(s) describing license condition(s) for, and set by the creator or authorized licensor of, ASF Content protected with DRM. The available DRM Flags (i.e. the "Rights") and the requirements (i.e. the "Settings") are listed below for COMPANY's reference.

For drmv7.lib:

Right	Settings
AllowPlayonPC	If set, the Windows CE .NET 4.2-based device may play the content.

For pddrm.lib:

Right	Settings
AllowTransferToNonSDMI	If set, the Windows CE .NET 4.2-based device may play the content.
AllowTransferToSDMI	If set, the Windows CE .NET 4.2-based device may play the content.

(k) "Export" means to save to permanent storage, pass to a plug-in interface, transfer to another process, write to a network, or otherwise export Content.

(l) "Material Security Problem" means a security breach in DRM affecting the Embedded System.

(m) "Protected Content" means Content contained within ASF and explicitly protected with DRM.

(n) "Sandboxed Applications" means applications, such as Java applets or .NET Compact Framework applications, which run in a controlled environment that prevents access to the Microsoft Windows CE .NET 4.2 operating system APIs or the DRM components.

(o) "Transcription" means the transformation of Content protection from DRM to an alternate form of digital rights management. This would be accomplished by extracting Protected Content from DRM into unprotected form, then transforming such unprotected Content into a new protected form defined for alternate digital rights management.

(p) "Windows Media Format" means formats developed by or for MSCORP for authoring, storing, editing, distributing, streaming, playing, referencing, or otherwise manipulating Content used by the Windows Media technologies during the term of the License Agreement. Windows Media Format currently supports the .WMA and .WMV file formats, which rely upon the Windows Media audio codec, Windows Media video codec, and other technologies.

2. The Licensed Product has been designed to work with the following operating system products: Microsoft Windows CE .NET Operating System For Embedded Systems, Professional Plus Version 4.2 Runtime; Microsoft Windows CE .NET Operating System For Embedded Systems, Professional Version 4.2 Runtime; or Microsoft Windows CE .NET Operating System For Embedded Systems, Core Version 4.2 Runtime. Accordingly, COMPANY is licensed to use the Licensed Product only in conjunction with a validly licensed copy of one of the foregoing operating systems.

3. COMPANY designates the following COMPANY Contact to receive DRM Certificates. MS will provide DRM Certificates solely to the COMPANY Contact. The COMPANY Contact may or may not be the primary contact for the License Agreement. In the event COMPANY wishes to change the COMPANY Contact during the term of the License Agreement, COMPANY will notify MS of the new COMPANY Contact by sending electronic mail to wmla@microsoft.com, or as otherwise directed by MS in writing.

Contact Name:	**<<Acct Mgr to enter customer contact name here>>**
Contact Job Title:	**<<Acct Mgr to enter contact's title here>>**
Address:	**<<Acct Mgr to enter customer's physical ship to address here. PO Boxes not acceptable>>**
Telephone Number:	**<<Acct Mgr to enter customer's phone number here>>**
Facsimile Number:	**<<Acct Mgr to enter customer's fax number here>>**
Email:	**<<Acct Mgr to enter customer's e-mail address here>>**

4. COMPANY will obtain DRM Certificates from MS. COMPANY will receive one (1) non-individualized DRM Certificate and one hundred thousand (100,000) individualized DRM Certificates. Additional DRM Certificates will be delivered to COMPANY as COMPANY may reasonably request from time to time, by sending electronic mail to wmla@microsoft.com, subject to COMPANY's compliance with the terms and conditions of the License Agreement (including this Amendment), and MS's then-current policies and prerequisites for issuing DRM Certificates.

5. COMPANY will use commercially reasonable efforts to include one (1) unique individualized DRM Certificate in each Embedded System device. If COMPANY is unable to meet the foregoing best practice, COMPANY shall include the same non-individualized DRM Certificate on all Embedded System devices of the same Model Name/Model Number as set forth on the Embedded Systems Table below.

6. COMPANY shall design its Embedded Systems to comply with the following DRM requirements as may be updated by MS periodically during the term of the License Agreement:

(a) In addition to the requirements set forth in the Embedded Systems definition in Section 1 of the BTDE, Embedded Systems shall comply with the Closed System requirements set forth in Additional Provision 1(c) above.

(b) Each Embedded System will implement a clock that provides date and time information to the Microsoft Windows CE .NET 4.2 operating system.

(c) COMPANY shall use commercially reasonable efforts to design Embedded Systems to prevent end users from tampering with the Licensed Product or the Embedded System.

(d) The Embedded System will not (i) circumvent or compromise DRM and/or DRM Client Component protection of ASF Content (e.g. by exposing programming APIs, end-user selectable options, or purposeful or accidental placement of debugging information); or (ii) Export Protected Content in an unprotected form.

(e) COMPANY will not use, incorporate, or enable any software in any Embedded System that modifies the behavior of the Embedded System in a manner which may cause it to violate the terms of the License Agreement (including this Amendment), and shall design all Embedded Systems to prevent the execution of such software.

(f) COMPANY may utilize digital rights management technologies other than the Licensed Product, provided, however, that the Embedded System does not allow for Transcription of Protected Content.

(g) COMPANY shall design Embedded Systems to allow software to be loaded by the end user on the Embedded System only if the software meets the following requirements: (i) COMPANY's digital signature is verified; (ii) no unauthorized changes have been made to the software; and (iii) strong encryption, using a minimum of a 56-bit encryption key, is used to protect the software. Sandboxed Applications are exempt from these requirements.

7. Provided that MS has notified COMPANY of DRM testing program requirements by June 1, 2005, COMPANY will use commercially reasonable efforts to meet such DRM testing program requirements for all Embedded Systems manufactured after December 31, 2005.

8. COMPANY will comply with the following Licensed Product maintenance and update requirements:

(a) During the term of the License Agreement, the DRM features of the Licensed Product may be enhanced to eliminate potential security breaches and/or to improve DRM features (including ease of use) with respect to DRM software. COMPANY acknowledges that MS will provide Content providers with the ability to set the minimum security level for compatibility of ASF Content, and that Embedded Systems created using older versions of the Licensed Product may not be fully compatible with such future ASF Content. MS will use reasonable commercial efforts to: (i) provide COMPANY with updates to DRM that correct security breaches, though such updates may require COMPANY to agree to additional or alternative terms and conditions with respect to the DRM Client Component update than those that set forth in the License Agreement including this Amendment; and (ii) notify COMPANY of any actual security breaches in DRM which in MS' sole and reasonable judgment would affect the Embedded Systems.

(b) Notwithstanding anything to the contrary in the License Agreement including this Amendment, if MS provides COMPANY with updates or additional code to the Licensed Product which correct actual or potential security breaches, COMPANY will use commercially reasonable efforts to incorporate and/or make available to users of the Embedded Systems, through reasonable means (such as availability on a COMPANY web site), such updates or additional code of the Licensed Product as part of and/or as updates or additional code to such Licensed Product. COMPANY will provide such updates or additional code to users within a commercially reasonable period of time (determined by the nature of such updates or additional code, but in no event more than ninety (90) days from the date COMPANY received such updates or additional code). Such updates or additional code may require COMPANY to agree to additional terms and conditions. If COMPANY does not make available to users of the Embedded Systems the necessary updates released by MS, COMPANY must immediately take reasonable efforts (such as COMPANY website posting or registered customers mailing) to make existing users aware of the security update and that new content may no longer be playable on the Embedded System due to the COMPANY's decision.

(c) Notwithstanding any provision of the License Agreement including this Amendment, if COMPANY intentionally or negligently fails to correct any Material Security Problem(s) and MS has provided COMPANY with two (2) business days notice of such Material Security Problem and has delivered appropriate DRM updates to COMPANY with respect to such security problem as of such notice, then MS or its authorized licensee or agent may, upon written notice at any time, cancel COMPANY's rights to the Licensed Product. All of COMPANY's rights to the Licensed Product, including distribution of the Licensed Product, shall immediately cease upon such cancellation.

9. The Licensed Product is protected by copyright laws and international copyright treaties, as well as other intellectual property laws and treaties. The Licensed Product is licensed, not sold. All title and intellectual property rights in and to the Licensed Product (including but not

limited to any images, photographs, animations, video, audio, music, text and "applets" incorporated into the Licensed Product), and any copies of the Licensed Product that COMPANY is expressly permitted to make herein, are owned by MS or its Suppliers. All title and intellectual property rights in and to the content which may be accessed through use of the Licensed Product are the property of the respective content owner and may be protected by applicable copyright or other intellectual property laws and treaties. This License Agreement grants COMPANY no rights to use such content. If the Licensed Product contains documentation which is provided only in electronic form, COMPANY may print one copy of such electronic documentation. COMPANY may not copy the printed materials accompanying the Licensed Product.

10. COMPANY may from time to time provide suggestions, comments, or other feedback ("Feedback") to MS or MSCORP with respect to the Licensed Product. COMPANY agrees that all Feedback is and shall be given entirely voluntarily. Feedback, even if designated as confidential by COMPANY, shall not, absent a separate written agreement, create any confidentiality obligation for MS or MSCORP. COMPANY will not give Feedback that is subject to license terms that seek to require any MS or MSCORP product, technology, service or documentation incorporating or derived from such Feedback, or any MS or MSCORP intellectual property, to be licensed or otherwise shared with any third party. Furthermore, except as otherwise provided herein, or in a separate subsequent written agreement between the parties, MS and MSCORP shall be free to use, disclose, reproduce, license or otherwise distribute and exploit the Feedback provided to it as it sees fit, entirely without obligation or restriction of any kind on account of intellectual property rights or otherwise.

11. COMPANY will provide a EULA with each Embedded System installed with the Licensed Product in accordance with Attachment 1.

EMBEDDED SYSTEMS.

Embedded Systems are described in the table below. Each listed Embedded System must have a unique model line name, model name, or model number which COMPANY uses both internally (in COMPANY's books and records) and externally (on the Embedded System and its packaging).

At COMPANY's option, for purposes of administrative convenience, COMPANY may designate models by model line or series (e.g., "Jaguar model line", "Jaguar Pro series", "Jaguar Pro 750 model line", "Jaguar Pro 950 series", etc.). Embedded Systems defined by model line or series shall include all present models which include the designated model line or series name, (e.g., "Jaguar Pro model line" includes Jaguar Pro, Jaguar Pro 950, Jaguar Pro S, etc.; "Jaguar series" includes Jaguar, Jaguar Pro, Jaguar Pro 950, Jaguar S400, etc.; "Jaguar Pro 950 series" includes Jaguar Pro 950, Jaguar Pro 955, etc.).

COMPANY may elect to include as Embedded System(s) new models which comply with all of the terms and conditions of the License Agreement by notifying MS of any such new model(s) when COMPANY submits its royalty report for the reporting period in which each such new model is first distributed with Licensed Product. Any new model in a licensed model line or series which is not included in a Notice to Add Embedded Systems (and is thus not licensed for the applicable Licensed Product) must have a unique model number or model name used for internal and external identification purposes which distinguishes it from any model which COMPANY has designated previously as an Embedded System.

Product Number Key: Please refer to the Product Number in the Product Table above.

A product is not licensed for distribution with a listed Embedded Systems, unless the product box for such product in the Embedded Systems table below is marked with an "X".

EMBEDDED SYSTEMS TABLE

Model Name/Model Number	**Processor**	**Product** - P21-00001

COMPANY hereby represents and warrants that the names and numbers indicated in the Model Name/Model Number column in the table above accurately denote the actual designation used by COMPANY to identify the listed models (on the Embedded System and in COMPANY's internal books and records).

ATTACHMENT 1

EULA TERMS

COMPANY shall sublicense the Licensed Product to end users by means of a EULA. COMPANY shall provide clear notice to Embedded System customers before or at the time of purchase that the Embedded System contains software that is subject to a license and that customer must agree to that license before it may use the Embedded System. COMPANY shall distribute the EULA in a manner that forms a contract binding the end user to the EULA terms under applicable law. The EULA shall contain (A) the following terms, and (B) any additional EULA terms set forth by MS in the Additional Provisions for the Licensed Product. COMPANY may include additional terms in the EULA, so long as they are no less protective of MS than the terms set forth below. COMPANY shall substitute its name for the bracketed text "[*COMPANY*]" in the EULA text.

- You have acquired a device ("DEVICE") that includes software licensed by [COMPANY] from an affiliate of Microsoft Corporation ("MS"). Those installed software products of MS origin, as well as associated media, printed materials, and "online" or electronic documentation ("SOFTWARE") are protected by international intellectual property laws and treaties. The SOFTWARE is licensed, not sold. All rights reserved.

- IF YOU DO NOT AGREE TO THIS END USER LICENSE AGREEMENT ("EULA"), DO NOT USE THE DEVICE OR COPY THE SOFTWARE. INSTEAD, PROMPTLY CONTACT [*COMPANY*] FOR INSTRUCTIONS ON RETURN OF THE UNUSED DEVICE(S) IN ACCORDANCE WITH [*COMPANY*]'S RETURN POLICIES. **ANY USE OF THE SOFTWARE, INCLUDING BUT NOT LIMITED TO USE ON THE DEVICE, WILL CONSTITUTE YOUR AGREEMENT TO THIS EULA (OR RATIFICATION OF ANY PREVIOUS CONSENT).**

  - **GRANT OF SOFTWARE LICENSE.** This EULA grants you the following license:

    - You may use the SOFTWARE only on the DEVICE.

    - **NOT FAULT TOLERANT.** THE SOFTWARE IS NOT FAULT TOLERANT. [*COMPANY*] HAS INDEPENDENTLY DETERMINED HOW TO USE THE SOFTWARE IN THE DEVICE, AND MS HAS RELIED UPON [*COMPANY*] TO CONDUCT SUFFICIENT TESTING TO DETERMINE THAT THE SOFTWARE IS SUITABLE FOR SUCH USE.

    - **Restricted Deployment.** The SOFTWARE is not designed or intended for use or resale in hazardous environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, or other devices or systems in which a malfunction of the SOFTWARE would result in foreseeable risk of injury or death to the operator of the device or system, or to others.

    - **NO WARRANTIES FOR THE SOFTWARE. THE SOFTWARE IS PROVIDED "AS IS" AND WITH ALL FAULTS. THE ENTIRE RISK AS TO SATISFACTORY QUALITY, PERFORMANCE, ACCURACY, AND EFFORT (INCLUDING LACK OF NEGLIGENCE) IS WITH YOU. ALSO, THERE IS NO WARRANTY AGAINST INTERFERENCE WITH YOUR ENJOYMENT OF THE SOFTWARE OR AGAINST INFRINGEMENT. IF YOU HAVE RECEIVED ANY WARRANTIES REGARDING THE DEVICE OR THE SOFTWARE, THOSE WARRANTIES DO NOT ORIGINATE FROM, AND ARE NOT BINDING ON, MS.**

    - **Restricted Functionality.** You are licensed to use the SOFTWARE to provide only the limited functionality (specific tasks or processes) for which the DEVICE has been designed and marketed by [COMPANY]. This license specifically prohibits any other use of the SOFTWARE, or inclusion of additional software programs or functions on the DEVICE.

    - **Digital Rights Management.** Content providers use Microsoft's Windows Media digital rights management technology contained in this SOFTWARE ("WM DRM") to protect the integrity of their content ("Protected Content") so that their intellectual property, including copyright, in such content is not misappropriated. When you play Protected Content, if the appropriate digital rights management license is not already loaded on your DEVICE, WM DRM will attempt to get the license from an Internet license server. If the license is available without user interaction, it will be downloaded onto your DEVICE automatically.

      Most license servers are operated by companies other than Microsoft. When requesting a license, WM DRM will provide the license server with certain standard information including your DEVICE's IP address, an ID for the music or video file, the action you have requested (such as play), version information about the DRM components on your DEVICE, and a digital certificate. This digital certificate is used only to generate a license and, because it is encrypted, is not available to the license server in a way that uniquely identifies your machine.

      If the security of WM DRM or the DEVICE has been compromised, Protected Content owners may request that Microsoft revoke the WM DRM's right to play Protected Content. A list of revoked SOFTWARE versions is included in each digital rights management license for Protected Content. **You therefore agree that when you download a license, it will include a**

revocation list (created by Microsoft on behalf of Protected Content owners) that could disable your DEVICE's ability to play Protected Content. Revocation does not alter the DEVICE's ability to play unprotected content.

- **No Liability for Certain Damages. EXCEPT AS PROHIBITED BY LAW, MS SHALL HAVE NO LIABILITY FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING FROM OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE SOFTWARE. THIS LIMITATION SHALL APPLY EVEN IF ANY REMEDY FAILS OF ITS ESSENTIAL PURPOSE. IN NO EVENT SHALL MS BE LIABLE FOR ANY AMOUNT IN EXCESS OF U.S. TWO HUNDRED FIFTY DOLLARS (U.S.$250.00).**

- **Consent to Use of Data.** You agree that MS, Microsoft Corporation and their affiliates may collect and use technical information gathered in any manner as part of product support services related to the SOFTWARE. MS, Microsoft Corporation and their affiliates may use this information solely to improve their products or to provide customized services or technologies to you. MS, Microsoft Corporation and their affiliates may disclose this information to others, but not in a form that personally identifies you.

- **Links to Third Party Sites.** The SOFTWARE may provide you with the ability to link to third party sites through the use of the SOFTWARE. The third party sites are not under the control of MS, Microsoft Corporation or their affiliates. Neither MS nor Microsoft Corporation nor their affiliates are responsible for (i) the contents of any third party sites, any links contained in third party sites, or any changes or updates to third party sites, or (ii) webcasting or any other form of transmission received from any third party sites. If the SOFTWARE provides links to third party sites, those links are provided to you only as a convenience, and the inclusion of any link does not imply an endorsement of the third party site by MS, Microsoft Corporation or their affiliates.

- **Limitations on Reverse Engineering, Decompilation, and Disassembly.** You may not reverse engineer, decompile, or disassemble the SOFTWARE, except and only to the extent that such activity is expressly permitted by applicable law notwithstanding this limitation.

- **Additional Software/Services.** The SOFTWARE may permit [*COMPANY*], MS, Microsoft Corporation or their affiliates to provide or make available to you SOFTWARE updates, supplements, add-on components, or Internet-based services components of the SOFTWARE after the date you obtain your initial copy of the SOFTWARE ("Supplemental Components").

- If [*COMPANY*] provides or makes available to you Supplemental Components and no other EULA terms are provided along with the Supplemental Components, then the terms of this EULA shall apply.

- If MS, Microsoft Corporation or their affiliates make available Supplemental Components, and no other EULA terms are provided, then the terms of this EULA shall apply, except that the MS, Microsoft Corporation or affiliate entity providing the Supplemental Component(s) shall be the licensor of the Supplemental Component(s).

- [*COMPANY*], MS, Microsoft Corporation and their affiliates reserve the right to discontinue any Internet-based services provided to you or made available to you through the use of the SOFTWARE.

- **Export Restrictions.** You acknowledge that SOFTWARE is subject to U.S. export jurisdiction. You agree to comply with all applicable international and national laws that apply to the SOFTWARE, including the U.S. Export Administration Regulations, as well as end-user, end-use and destination restrictions issued by U.S. and other governments. For additional information, see http://www.microsoft.com/exporting/.

Amendment Number:	<<TAG: AmendmentNumber>>
Amendment Date:	<<TAG: AmendmentEffectiveDate>>
COMPANY Name:	<<TAG: COMPANY NAME>>
Customer License Agreement Number:	<<TAG: AgrNum>>
Agreement Effective Date:	<<TAG: EffDate>>

AMENDMENT TO THE MICROSOFT OEM CUSTOMER LICENSE AGREEMENT FOR EMBEDDED SYSTEMS

Effective as of the Amendment Date indicated above, the below signed parties agree that the indicated portions of the above referenced Microsoft OEM Customer License Agreement For Embedded Systems (hereinafter the "License Agreement") are hereby amended by this instrument (hereinafter the "Amendment"), as follows:

A. The attached terms and conditions are hereby added as Section 17 of the General Terms and Conditions of the License Agreement.

B. For purposes of this Amendment, the terms of this Amendment (including any definitions herein) shall supersede any inconsistent terms (and definitions) contained in the License Agreement and/or any previous amendment(s).

IN WITNESS WHEREOF, the parties have executed this Amendment in duplicate as of the date first written above. All signed copies of this Amendment shall be deemed originals. This Amendment is executed only in the English language.

MICROSOFT LICENSING, GP
A general partnership organized under the laws of:
State of Nevada, U.S.A.

By (Signature): _____

Name: _____

Job Title: _____

Date: _____

<<COMPANY NAME>>
A company organized under the laws of:
<<Incorp>>

By (Signature): _____

Name: _____

Job Title: _____

Date: _____

NOTICES

All notices related to the License Agreement and this Amendment must be addressed to the contact name and address listed below, or to such other address as either party may hereafter specify in writing.

COMPANY Information

Contact Name: _____

Phone Number: _____

Fax Number: _____

E-mail: _____

COMPANY Contact Information (as defined in Section 17(c))

Contact Name: _____

Contact Job Title: _____

Address: _____
(no P.O. Boxes, must be physical address)

_____

Telephone Number: _____

Facsimile Number: _____

Email: _____

MS Information ***(COMPANY shall send COMPANY Notices to:)***
Microsoft Licensing, GP
6100 Neil Road
Reno, NV 89511-1132 U.S.A.
Attention: OEM Contracts

Phone Number: (1) 775-823-5600
Fax Number: (1) 775-826-0531

With an additional copy to:

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399 U.S.A.
Attention: Law and Corporate Affairs
Re: Microsoft Licensing, GP – OEM Device Solution Sales

17. **ADDITIONAL PROVISIONS RELATING TO MICROSOFT® WINDOWS MEDIA® DRM 7.1 FOR WINDOWS® CE .NET 4.2.** The following provisions apply to Licensed Product(s) containing DRM and are in addition to the other provisions of the General Terms and Conditions of this License Agreement. Capitalized terms used below and not otherwise defined have the meaning set forth in the other provisions of the General Terms and Conditions of this License Agreement.

(a) Definitions. As used in this Section 17:

(i) "Advanced Systems Format" or "ASF" means the current version of the extensible file storage format developed by or for MSCORP for authoring, editing, archiving, distributing, streaming, playing, referencing, or otherwise manipulating Content, as used by the Windows Media technologies.

(ii) "ASF Content" means Content contained within ASF and optionally protected with DRM.

(iii) "Closed System" means an Embedded System which limits the software that can be loaded and executed by the end user by requiring that such software be either (i) digitally signed and encrypted software from COMPANY, or (ii) applications which can only be executed as Sandboxed Applications.

(iv) "COMPANY Contact" means the person identified in the table in Section 17(c) responsible for coordinating the licensing steps required to obtain the Licensed Product and for requesting and receiving DRM Certificate(s) as specified in Section 17(d). The Company Contact should contact Windows Media Licensing Administration (at wmla@microsoft.com) for detailed instructions.

(v) "Content" means digital audio (including, but not limited to, timeline-synchronized audio, music, ring tones, voice, or sounds), digital video, and other digital information including data, text (including, but not limited to, script command data and related metadata such as a song title or an artist's name), animation, graphics, photographs, artwork, and combinations of any or all of the foregoing.

(vi) "Convert" means to remove the DRM protection from a Content file in ASF for any purpose not explicitly authorized by the DRM Flags of the license for that Content, including but not limited to writing that unprotected DRM Content to disk or to a network.

(vii) "DRM" means the Licensed Product's digital rights management system that enables enforcement of business rules and license-based restrictions for Content.

(viii) "DRM Certificate" means an MS provided, unique-to-COMPANY software component(s), that enables, in accordance with Section 17(f), a Embedded System to use the portions of Licensed Product that manipulate ASF Content protected by DRM. Any DRM Certificate(s) provided by MS to COMPANY hereunder will be considered part of the Licensed Product.

(ix) "DRM Client Component" means the DRM component of the Licensed Product that, together with the DRM Certificate, enables an Embedded System to playback ASF Content protected with DRM in accordance with the requirements of Section 17(f).

(x) "DRM Flag(s)" means the flag(s) describing license condition(s) for, and set by the creator or authorized licensor of, ASF Content protected with DRM. The available DRM Flags (i.e. the "Rights") and the requirements (i.e. the "Settings") are listed below for COMPANY's reference.

For drmv7.lib:

Right	Settings
AllowPlayonPC	If set, the Windows CE .NET 4.2-based device may play the content.

For pddrm.lib:

Right	Settings
AllowTransferToNonSDMI	If set, the Windows CE .NET 4.2-based device may play the content.
AllowTransferToSDMI	If set, the Windows CE .NET 4.2-based device may play the content.

(xi) "Export" means to save to permanent storage, pass to a plug-in interface, transfer to another process, write to a network, or otherwise export Content.

(xii) "Material Security Problem" means a security breach in DRM affecting the Embedded System.

(xiii) "Protected Content" means Content contained within ASF and explicitly protected with DRM.

(xiv) "Sandboxed Applications" means applications, such as Java applets or .NET Compact Framework applications, which run in a controlled environment that prevents access to the Microsoft Windows CE .NET 4.2 operating system APIs or the DRM components.

(xv) "Transcription" means the transformation of Content protection from DRM to an alternate form of digital rights management. This would be accomplished by extracting Protected Content from DRM into unprotected form, then transforming such unprotected Content into a new protected form defined for alternate digital rights management.

(xvi) "Windows Media Format" means formats developed by or for MSCORP for authoring, storing, editing, distributing, streaming, playing, referencing, or otherwise manipulating Content used by the Windows Media technologies during the term of the License Agreement. Windows Media Format currently supports the .WMA and .WMV file formats, which rely upon the Windows Media audio codec, Windows Media video codec, and other technologies.

(b) The Licensed Product has been designed to work with the following operating system products: Microsoft Windows CE .NET Operating System For Embedded Systems, Professional Plus Version 4.2 Runtime; Microsoft Windows CE .NET Operating System For Embedded Systems, Professional Version 4.2 Runtime; or Microsoft Windows CE .NET Operating System For Embedded Systems, Core Version 4.2 Runtime. Accordingly, COMPANY is licensed to use the Licensed Product only in conjunction with a validly licensed copy of one of the foregoing operating systems.

(c) COMPANY designates the COMPANY Contact listed in the notices above to receive DRM Certificates. MS will provide DRM Certificates solely to the COMPANY Contact. The COMPANY Contact may or may not be the primary contact for the License Agreement. In the event COMPANY wishes to change the COMPANY Contact during the term of the License Agreement, COMPANY will notify MS of the new COMPANY Contact by sending electronic mail to wmla@microsoft.com, or as otherwise directed by MS in writing.

(d) Notwithstanding anything in the other provisions of the General Terms and Conditions of this License Agreement to the contrary, COMPANY will obtain DRM and DRM Certificates directly from MS and not through a MS Distributor. COMPANY will receive one (1) non-individualized DRM Certificate and one hundred thousand (100,000) individualized DRM Certificates. Additional DRM Certificates will be delivered to COMPANY as COMPANY may reasonably request from time to time, by sending electronic mail to wmla@microsoft.com, subject to COMPANY's compliance with the terms and conditions of the License Agreement (including this Amendment), and MS's then-current policies and prerequisites for issuing DRM Certificates.

(e) COMPANY will use commercially reasonable efforts to include one (1) unique individualized DRM Certificate in each Embedded System device. If COMPANY is unable to meet the foregoing best practice, COMPANY shall include the same non-individualized DRM Certificate on all Embedded System devices of the same Model Name/Model Number.

(f) COMPANY shall design its Embedded Systems to comply with the following DRM requirements as may be updated by MS periodically during the term of the License Agreement:

(i) In addition to the requirements set forth in the Embedded Systems definition in Section 1 of the License Agreement, Embedded Systems shall comply with the Closed System requirements set forth in Section 17(a)(iii) above.

(ii) Each Embedded System will implement a clock that provides date and time information to the Microsoft Windows CE .NET 4.2 operating system.

(iii) COMPANY shall use commercially reasonable efforts to design Embedded Systems to prevent end users from tampering with the Licensed Product or the Embedded System.

(iv) The Embedded System will not (i) circumvent or compromise DRM and/or DRM Client Component protection of ASF Content (e.g. by exposing programming APIs, end-user selectable options, or purposeful or accidental placement of debugging information); or (ii) Export Protected Content in an unprotected form.

(v) COMPANY will not use, incorporate, or enable any software in any Embedded System that modifies the behavior of the Embedded System in a manner which may cause it to violate the terms of the License Agreement (including this Amendment), and shall design all Embedded Systems to prevent the execution of such software.

(vi) COMPANY may utilize digital rights management technologies other than the Licensed Product, provided, however, that the Embedded System does not allow for Transcription of Protected Content.

(vii) COMPANY shall design Embedded Systems to allow software to be loaded by the end user on the Embedded System only if the software meets the following requirements: (i) COMPANY's digital signature is verified; (ii) no unauthorized changes have been made to the software; and (iii) strong encryption, using a minimum of a 56-bit encryption key, is used to protect the software. Sandboxed Applications are exempt from these requirements.

(g) Provided that MS has notified COMPANY of DRM testing program requirements by June 1, 2005, COMPANY will use commercially reasonable efforts to meet such DRM testing program requirements for all Embedded Systems manufactured after December 31, 2005.

(h) COMPANY will comply with the following Licensed Product maintenance and update requirements:

(i) During the term of the License Agreement, the DRM features of the Licensed Product may be enhanced to eliminate potential security breaches and/or to improve DRM features (including ease of use) with respect to DRM software. COMPANY acknowledges that MS will provide Content providers with the ability to set the minimum security level for compatibility of ASF Content, and that Embedded Systems created using older versions of the Licensed Product may not be fully compatible with such future ASF Content. MS will use reasonable commercial efforts to: (A) provide COMPANY with updates to DRM that correct security breaches, though such updates may require COMPANY to agree to additional or alternative terms and conditions with respect to the DRM Client Component update than those that set forth in the License Agreement including this Amendment; and (B) notify COMPANY of any actual security breaches in DRM which in MS' sole and reasonable judgment would affect the Embedded Systems.

(ii) Notwithstanding anything to the contrary in the License Agreement including this Amendment, if MS provides COMPANY with updates or additional code to the Licensed Product which correct actual or potential security breaches, COMPANY will use commercially reasonable efforts to incorporate and/or make available to users of the Embedded Systems, through reasonable means such updates or additional code of the Licensed Product as part of and/or as updates or additional code to such Licensed Product. COMPANY will provide such updates or

additional code to users within a commercially reasonable period of time (determined by the nature of such updates or additional code, but in no event more than ninety (90) days from the date COMPANY received such updates or additional code). Such updates or additional code may require COMPANY to agree to additional terms and conditions. If COMPANY does not make available to users of the Embedded Systems the necessary updates released by MS, COMPANY must immediately take reasonable efforts (such as COMPANY website posting or registered customers mailing) to make existing users aware of the security update and that new content may no longer be playable on the Embedded System due to the COMPANY's decision.

(iii) Notwithstanding any provision of the License Agreement including this Amendment, if COMPANY intentionally or negligently fails to correct any Material Security Problem(s) and MS has provided COMPANY with two (2) business days notice of such Material Security Problem and has delivered appropriate DRM updates to COMPANY with respect to such security problem as of such notice, then MS or its authorized licensee or agent may, upon written notice at any time, cancel COMPANY's rights to the Licensed Product. All of COMPANY's rights to the Licensed Product, including distribution of the Licensed Product, shall immediately cease upon such cancellation.

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(k) Notwithstanding anything in the other provisions of the General Terms and Conditions of this License Agreement to the contrary COMPANY will provide a EULA with each Embedded System installed with the Licensed Product in accordance with Attachment 1.

(l) There is no COA for this Licensed Product.

(m) Notwithstanding anything in the other provisions of the General Terms and Conditions of this License Agreement to the contrary, COMPANY is not required to pay a royalty to MS or any MS Distributor for the Licensed Product.

ATTACHMENT 1

EULA TERMS

COMPANY shall sublicense the Licensed Product to end users by means of a EULA. COMPANY shall provide clear notice to Embedded System customers before or at the time of purchase that the Embedded System contains software that is subject to a license and that customer must agree to that license before it may use the Embedded System. COMPANY shall distribute the EULA in a manner that forms a contract binding the end user to the EULA terms under applicable law. The EULA shall contain (A) the following terms, and (B) any additional EULA terms set forth by MS in the additional provisions for the Licensed Product. COMPANY may include additional terms in the EULA, so long as they are no less protective of MS than the terms set forth below. COMPANY shall substitute its name for the bracketed text "[*COMPANY*]" in the EULA text.

- You have acquired a device ("DEVICE") that includes software licensed by [COMPANY] from an affiliate of Microsoft Corporation ("MS"). Those installed software products of MS origin, as well as associated media, printed materials, and "online" or electronic documentation ("SOFTWARE") are protected by international intellectual property laws and treaties. The SOFTWARE is licensed, not sold. All rights reserved.

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      Most license servers are operated by companies other than Microsoft. When requesting a license, WM DRM will provide the license server with certain standard information including your DEVICE's IP address, an ID for the music or video file, the action you have requested (such as play), version information about the DRM components on your DEVICE, and a digital certificate. This digital certificate is used only to generate a license and, because it is encrypted, is not available to the license server in a way that uniquely identifies your machine.

      If the security of WM DRM or the DEVICE has been compromised, Protected Content owners may request that Microsoft revoke the WM DRM's right to play Protected Content. A list of revoked SOFTWARE versions is included in each digital rights management license for Protected Content. **You therefore agree that when you download a license, it will include a revocation list (created by Microsoft on behalf of Protected Content owners) that could disable your DEVICE's ability to play Protected Content.** Revocation does not alter the DEVICE's ability to play unprotected content.

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- [*COMPANY*], MS, Microsoft Corporation and their affiliates reserve the right to discontinue any Internet-based services provided to you or made available to you through the use of the SOFTWARE.

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EXCERPT FROM
***EX PARTE* LETTER FROM MICROSOFT AND HEWLETT-PACKARD**
(CS Docket No. 97-80, PP Docket No. 00-67, filed Aug. 8, 2003)

THE PLUG-AND-PLAY RULES SHOULD ACCOMMODATE PERSONAL COMPUTERS AS FULLY-FUNCTIONAL ENTERTAINMENT DEVICES

Recent surveys and experience show that consumers increasingly view their PCs as an essential part of the home entertainment experience. According to a Harris Interactive Survey conducted in March 2003 for Microsoft, sixty-three percent (63%) of survey respondents currently use a PC in a group living area (*e.g.*, living room, den, kitchen). Survey respondents 13 and older said they consider PCs more important for home entertainment than a CD player, stereo or DVD player. A recent eMarketer article described a July 2003 InsightExpress survey showing that over half (57%) of PC owners surveyed said they intended to have all of their photos in digital format over the next year.[1] Thirty-three percent (33%) of respondents said they wanted to spend more time managing and editing digital pictures on their PCs while thirty-two percent (32%) would like to spend more time burning CDs.[2]

The Harris Interactive Survey showed that young people in particular have embraced the PC as a source of entertainment. About seventy-five percent (75%) of teens (13 to 17 years old) indicated that they listen to music while using their computers. Forty-one percent (41%) of teens said that they listen to music exclusively on computers, while thirty-five percent (35%) said they use a PC as often as a stereo or portable music player. Sixty-five percent (65%) of teens ranked the PC a more important entertainment device than the VCR, and fifty-seven percent (57%) said that editing digital photos is an important use of the PC. Such widespread consumer adoption and excitement about the use of the PC as a source of entertainment creates strong opportunities for the cable industry as it looks for new revenue streams. The installed base of PCs in homes in the United States is now in the high tens of millions; such an audience adds tremendous potential reach to the cable industry's digital services, increasing the importance of including applicable PCs in the criteria for Digital Cable Ready devices.

Building on the growing popularity of the PC as an entertainment device, PC manufacturers recently released the Media Center PC, powered by the Microsoft Windows XP Media Center Edition operating system. Media Center PCs are specially designed to serve as both a computer and a hub of home entertainment. They come with mid- to high-end processors, plentiful memory, high-capacity hard disks, CD-ROM/DVD drives, advanced graphic and audio capabilities, networking connectivity, and a single remote control used to access the full range of entertainment resources, including digital videos and photos, DVDs, and downloaded movies and music. Media Center PCs can be connected to the Internet, a television, a cable network

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[1] "What Users Want From PCs," *eMarketer*, July 30, 2003, available at http://www.emarketer.com/news/article.php?1002376 (last visited Aug. 8, 2003).

[2] *Id.*

through a set-top box and/or to a home network used to share printers, devices, files and Internet connectivity among all the computers in a home. The Media Center PC offers consumers an exciting new entertainment experience, one that would be even richer if the device could include a point-of-deployment (POD/CableCARD) module and receive video programming directly from a cable network without an intervening and costly set-top box.

In fact, because of the low cost of memory, hard disk storage space and processing power, many consumer electronics (CE) manufacturers are now developing television products, such as Personal Video Recorders (PVRs) and other devices, that have open product architectures similar to PCs. These new products are enhancing competition and improving consumers' entertainment experience by doing much more than simply tuning TV channels.

As submitted, however, the *Plug-and-Play Proposal*, with the well-intentioned goal of gaining quick agreement, has, in our view, narrowed the specification in a way that could undermine these and other IT innovations by (1) excluding PCs and other IT devices from the first generation of "Digital Cable Ready" equipment available to consumers for connection directly to cable systems and (2) constraining the network connectivity of digital content received via cable to a single type of wired network connection (IEEE 1394). The effect of these limitations will be to retard the development of the very kinds of technological innovations that are driving consumer participation in the transition to digital television. The success of the DTV transition ultimately will depend on the availability of a diversity of digital devices and technologies that, together with the availability of high-value digital content, enhance the consumer's entire home entertainment experience. But the technologies that are exciting consumers today – WiFi (802.11x), Bluetooth, USB, Internet Protocol, and PCs that create and manage home networks allowing consumers to optimize the digital entertainment experience – all seem to be left out of the *Plug-and-Play Proposal.*

Confining the *Plug-and-Play Proposal* to a very limited group of devices and networking protocol – ostensibly (but unnecessarily) to ensure the security of high-value digital content – takes away the other essential element – technological innovation – on which the success of the DTV transition depends. That element of the transition need not and cannot wait until the industries have settled on a "bi-directional" plug-and-play standard. The digital transition should not be subject to further delay. Moreover, in today's rapidly-evolving marketplace, consumers could lose the opportunity to take advantage of these new technologies if consumer choice is limited in the near term to the technologies called out by the current *Plug-and-Play Proposal.*

Both NCTA and CEA have stated that the negotiators did not intend to exclude PCs categorically from the *Plug-and-Play Proposal.* According to NCTA, the limitation to "unidirectional" devices "was designed to accommodate devices that did not require resolution of the bi-directional issues now being addressed by the MSO and CE negotiators. . . . Thus, the proposal does *not* prohibit compliant TVs or other devices with a cable modem in the housing. Nor does the proposal prohibit a PC with a POD slot and Internet connectivity – provided that

the PC meets the compliance and robustness rules."[3] Similarly, CEA stated that the DFAST License Agreement was not intended to exclude PCs and other cable modem-equipped devices: "The parties understood that the term 'Unidirectional' is meant to exclude only the use of the return path to the cable headend for the purpose of specific signaling in the context of cable television and ancillary services. It is *not* meant to exclude, *e.g.*, incorporation of a modem for access to the Internet via broadband connectivity provided by cable modem service, DSL, or other services."[4]

Despite NCTA's and CEA's stated intentions, however, the *Plug-and-Play Proposal* in fact contains a number of elements that, if allowed to remain, could have the net effect of excluding PCs and PC-related technologies from participating in the market for unidirectional digital cable devices. To promote investment and innovation and avoid pre-selecting the technologies that will succeed in the digital age, we ask the Commission to remedy this oversight by modifying the *Plug-and-Play Proposal* in the following respects:

- Revise the proposed regulations to ensure that PCs and other open-architecture consumer IT devices are not foreclosed (by definition or otherwise) from being developed and marketed as Digital Cable Ready devices; and

- Ensure that the compliance and robustness rules in the DFAST License (which is required to deploy the POD/CableCARD needed to receive encrypted digital cable programming) allow for diverse and flexible network connections and content protection techniques, including digital rights management (DRM) technologies that protect content wherever it travels by embedding and associating the appropriate usage rights policy with the content, independent of the underlying network technologies through which it may pass.

As noted above, these modifications will promote investment and innovation and help to ensure that consumers are able to embrace fully the technologies that hold the greatest potential to drive the transition to digital television.

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[3] Reply Comments of the National Cable & Telecommunications Association (NCTA), CS Docket No. 97-80, PP Docket No. 00-67, at 30-31 (Apr. 28, 2003) (emphasis in original) (*NCTA Reply Comments*).

[4] Consumer Electronics Industry Reply Comments, CS Docket No. 97-80, PP Docket No. 00-67, at 7 (Apr. 28, 2003) (emphasis in original) (*CE Reply Comments*).

EXCERPT FROM
IT INDUSTRY COMMENTS ON PLUG-AND-PLAY FNPRM
(CS Docket No. 97-80, PP Docket No. 00-67, filed Feb. 13, 2004)

I. THE COMMISSION'S RULES SHOULD RECOGNIZE THAT PERSONAL COMPUTERS ALREADY HAVE BECOME FULLY-FUNCTIONAL HOME ENTERTAINMENT DEVICES.

As Microsoft and HP explained in their August 8, 2003 *ex parte* filing in this proceeding ("*MS-HP Ex Parte*"), the transition of entertainment media to digital technology has led consumers increasingly to view the PC as a new engine for delivering entertainment in the home.[1] Digital cable services are widely available, broadcasters are transmitting digital television programming over-the-air and music and entertainment companies are offering digital music on CDs and in various digital file formats including AAC, MP3 and WMA. At the same time, consumers are accelerating the PC's move from a business and home management tool in the home office to an entertainment center in the living room and kitchen. Consumers are using their PCs to listen to music, to organize and enjoy digital photographs, and to watch DVDs and other video programming including broadcast television and movies streamed over the Internet.[2] Consumers are also eagerly adopting technologies (including WiFi, Bluetooth, USB, and Internet Protocol) that enable home networking and further facilitate the consumption of digital media in the home. And through these uses and technologies, consumers are realizing greater value from all their digital devices and purchased media and services.

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[1] *See Ex Parte* Letter from Microsoft Corp. and Hewlett-Packard Corp. to Marlene Dortch, Secretary, FCC, CS Docket No. 97-80, PP Docket No. 00-67, at 2-3 (Aug. 8, 2003) (*MS-HP Ex Parte*).

[2] Surveys indicate that consumers would like to make even greater use of their PCs as home entertainment devices. *Id.* For example, one 2003 survey showed that 57% of PC owners surveyed intended to have all of their photos in digital format over the next year, 33% wanted to spend more time managing and editing digital pictures on their PCs and 32% wanted to spend more time burning CDs on their PCs.

Building on these trends, PC manufacturers are developing PCs and other open architecture devices specifically designed to optimize the digital entertainment experience.[3] For example, PC manufacturers recently released the second version of the Media Center PC, powered by the Windows XP Media Center Edition 2004 operating system. Media Center PCs are specially designed to serve as both a computer and a home entertainment hub. They include mid- to high-end processors, plentiful memory, high-capacity hard disks, CD-ROM/DVD drives, advanced graphic and audio capabilities, networking connectivity, and a remote control used to access the full range of the PC's entertainment resources – including digital video and photos, DVDs, downloaded movies and music, and other content delivered to the PC via broadcast, cable and satellite, typically through a set-top box. As broadcasters and other content providers continue to embrace the benefits of digital distribution, the expectation is that commercial content from a wide array of sources will be accessible not only from a monitor or television wired to the Media Center PC, but via a secure wireless network (including content protection for analog broadcast signals) interconnecting the Media Center PC with televisions and X-Box gaming consoles throughout the home.

Similarly, Apple applications such as iLife, iTunes and iDVD – enabled by Apple's "Digital Hub" concept using the computational and I/O power of the modern Macintosh and OSX operating system to give the ordinary user capabilities previously available only to high-end audio and video professionals – make it intuitive and convenient for the average user to

[3] A number of factors are contributing to this evolution of the IT industry. For example, "[t]he emphasis today is on digital media, including DVD movies, downloaded music, and digital photos, and by extension the smart, connected devices that manipulate and move those files around the house. Smart, connected devices are genetically closer to computers than to traditional consumer electronics products." Peter Lewis, "Gadget Wars: Who Will Own Your Living Room?," *Fortune*, Jan. 27, 2004.

integrate their personal video and photo assets with their home entertainment devices. Apple's iPod arguably represents one of the most successful innovations to date in the area of legitimate distribution of music to personal playback devices.

In fact, because of the decreasing cost of memory, hard disk storage space and processing power, many consumer electronics (CE) manufacturers are developing television enhancement products and services, such as Personal Video Recorders (PVRs) and other devices, that have open platforms similar to PCs. These converging products – PCs designed to serve a home entertainment function and consumer devices incorporating hard drives and open product architectures typically associated with PCs – are improving consumers' entertainment choices and experience, introducing new levels of vigorous competition and promoting economic growth.[4]

These devices and related technologies (WiFi, Bluetooth, USB, Internet Protocol, and PCs) that form home networks and allow consumers to optimize the digital entertainment experience are inciting consumers to embrace the digital transition. If allowed to develop and deploy to their full potential, these devices and technologies could also finally drive the large-scale deployment of competitive navigation devices that the Commission has been seeking to achieve since 1997. But if these products and technologies are to realize their full potential, they must be able to access a broad range of content distribution mechanisms and systems. This includes the capability to connect seamlessly with digital cable systems without the explicit

[4] These types of open platform devices will also, in the long term, play a critical role in the success of bi-directional products and services. Open platform devices also facilitate the emergence of a broad range of component suppliers, promoting job growth and stimulating economic expansion.

requirement of a set-top box carrying an additional fee for the consumer and increasing the complexity of system set-up.

The rules adopted in the *Plug-and-Play Order* take an important first step toward making new digital cable products available to consumers. But, as the Commission appeared to recognize, the current rules may not go far enough to ensure that PCs and related devices, services and technologies will be full participants in the emerging market for competitive digital cable devices.[5] To remedy this deficiency and promote a truly vibrant and competitive market for digital cable devices, the Commission should consider adopting additional rules and procedures to afford greater flexibility in the types of digital connections and technologies approved for use in unidirectional "digital cable ready" products.

[5] *See Further Notice* ¶ 83 ("[W]e are concerned that [the process for considering and approving] outputs and associated content protection technologies to be used in unidirectional digital cable products could affect innovation, and interoperability.").